FOR BLNR REVIEW

VOLUME II OF III

~~Draft~~Final Environmental Impact Statement

DLNR INDUSTRIAL AND BUSINESS PARK
(TMK (2)3-8-008:001 (por.))

Prepared for:

State of Hawai'i
Department of Land and Natural Resources

Accepting Authority:

Governor
State of Hawai'i

~~May 2018~~February 2019

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MUNEKIYO HIRAGA

Planning. Project Management. Sustainable Solutions.

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VOLUME II OF III

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A

MARKET STUDY

PREPARED FOR: **MUNEKIYO HIRAGA**

MS. TESSA MUNEKIYO NG, AICP
Vice President
305 High Street, Suite 104
Wailuku, Hawaii 96793

EFFECTIVE DATE: **November 28, 2018**

A MARKET STUDY FOR THE PROPOSED DLNR INDUSTRIAL AND BUSINESS PARK, DISTRICT OF WAILUKU, ISLAND OF MAUI, HAWAII

ACM CONSULTANTS, INC.

December 4, 2018 15-9117

Ms. Tessa Munekiyo Ng, AICP
Vice President
MUNEKIYO HIRAGA
305 High Street, Suite 104
Wailuku, Hawaii 96793

Re: Market Study for the proposed State of Hawaii Department of Land and Natural Resources Industrial and Business Park, District of Wailuku, Island and County of Maui, State of Hawaii

Tax Map Key: (2) 3-8-08-001 (portion of)

Dear Ms. Munekiyo Ng:

In accordance with your request, I have inspected the above-referenced property in order to provide a defined scope market study for the proposed State of Hawaii Department of Land and Natural Resources (DLNR) Industrial and Business Park ("Proposed Project"), District of Wailuku, Island and County of Maui, State of Hawaii. This *consulting report* and the conclusions herein are based on the on-site inspection of the property, a study of current political and economic conditions, and a historical review of the real estate market on Maui. The effective date of this report is November 28, 2018.

The Proposed Project area, which consists of approximately 280 acres of land, has a State Land Use designation of Agricultural District and Agricultural District zoning from the County of Maui. Although identified on State of Hawaii Tax Maps as being within the District of Wailuku, the subject parcel is classified Agriculture (AG) by the Kihei-Makena Community Plan. The Proposed Project is still in its preliminary planning stage. As presently envisioned, the proposed development will consist of an M-1 Light Industrial District park east of Maui Veterans Highway. The Proposed Project area was formerly utilized for commercial sugar cane production.

The Maui Consolidated Facility for the Hawaii Army National Guard and Maui Raceway Park are located to the south of the subject project area, within Project District 10. The park provides a wide variety of recreational uses including: drag racing, auto cross racing, go kart racing, dirt oval track racing, radio controlled model aircraft flying and dirt bike racing. Additional nearby uses include a quarry for Hawaiian Cement, the Maui Humane Society and the Central Maui Baseyard.

Central Maui Baseyard is a leasehold industrial park situated approximately one mile to the north of the proposed project. The leased fee owner is A&B Properties, Inc. and leasehold ownership is held by S&F Land Company, Inc. Existing building improvements within Central Maui Baseyard include various wood and metal-frame structures consisting of warehouses, sheds and small offices. Several buildings on site contain spaces that are leased to tenants by the sub-

lessor. These include older warehouse and small office spaces that existed at the time the land was leased to S&F Land Company, Inc. All other building improvements were constructed by existing or prior tenants and not leased out by the sub-lessor.

The market study for this proposed project (a) defines and delineates the market area; (b) identifies and analyzes the current demand and supply conditions that comprise the existing real estate market segment; and (c) identifies, measures, and forecasts the effect of anticipated developments or other changes on future demand and supply for the target market segment.

The following report presents a narrative review of the study and my analysis of data along with other pertinent materials on which this report is predicated. It contains data and exhibits gathered in my investigation, as well as a description of the analytical process and my conclusions, as of November 28, 2018. Thank you for allowing me the opportunity to work on this interesting assignment.

Respectfully submitted,
ACM Consultants, Inc.

Shane M. Fukuda, MAI, as Sub-Consultant
Certified General Appraiser,
State of Hawaii, CGA-810
Expiration: December 31, 2019

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EXHIBITS
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ADDENDA
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Limiting and Contingent Conditions
Qualifications of the Consultant

PART I – INTRODUCTION

A. EXECUTIVE SUMMARY

Background

The proposed DLNR Industrial and Business Park ("Proposed Project") is envisioned as an M-1 Light Industrial District park to be developed on approximately 280 acres east of Maui Veterans Highway. As shown on the State of Hawaii Tax Maps, the subject parcel is within the District of Wailuku, Island and County of Maui. As of the effective date, the subject site has an Agricultural District State Land Use designation, Agricultural District zoning by the County of Maui zoning and Agriculture classification within the Kihei-Makena Community Plan. The Proposed Project site also lies within the Urban Growth Boundary set forth by the Maui Island Plan (December 2012).

The light industrial zoning district provides for a minimum lot size of 7,500 square feet. The current version of land use is to provide approximately 83 leasable lots, consisting of 18 lots between 0.5 acres to less than 1 acre; 32 lots of between 1 acre and less than 3 acres; 25 lots of 3 to less than 5 acres; and 8 lots of 5 acres or larger. The Proposed Project will feature interior roads, bicycle paths, open space areas and drainage networks. A 20-acre baseyard for the State of Hawaii Division of Forestry and Wildlife will also be located within the subdivision.

Study Objectives

ACM Consultants, Inc. has been retained by Munekiyo Hiraga. as a sub-consultant for their client, State of Hawaii Department of Land and Natural Resources, to analyze the light industrial market as it relates to this proposed project. In particular, economic trends and demographics have been studied, as well as supply and demand factors for industrial property. In the process, an abundance of information was gathered regarding industrial real estate sales on Maui and, more specifically, in the Central Maui and Kihei regions. Attention has been paid to industrial land ownership, the availability of vacant parcels, and the future supply of additional light industrial land.

Although M-1 Light Industrial District zoning allows commercial uses, the target market for the Proposed Project are true light industrial users. Given its location, away from current urban cores, it is anticipated that those looking for land to develop commercial retail/office uses will be limited.

The objectives of is study are: (a) to define and delineate the market area; (b) identify and analyze the current demand and supply conditions that comprise the existing real estate market segment; and (c) identify, measure, and forecast the effect of anticipated developments or other changes on future demand and supply for the target market segment.

Key Demand Factors

The following points summarize the demand for light industrial real estate in the Central Maui and Kihei regions at this time:

- The growth of Maui's population has led to a larger employment base. Jobs are the primary driver for the industrial market;
- The pent-up demand from light industrial users is expected to generate good interest for the proposed product;
- Mortgage interest rates continue to be at all-time lows, which makes for favorable financing;

Key Supply Factors

The following points summarize the supply for light industrial real estate in the Central Maui and Kihei regions at this time:

- Although there is currently a significant amount of developer lots within Maui Business Park II and Maui Lani Village Center, the primary buyers for these Kahului projects have been commercial and quasi-retail businesses. The asking prices for the lots in Maui Business Park II and Maui Lani Village Center are not feasible for typical light industrial users;
- Conventional light industrial subdivisions in Central Maui and Kihei no longer have developable inventory. Most of the parcels have been improved or being utilized for base yards by their owners;
- Supply continues to diminished because of continued conversion to higher-order commercial retail/office uses allowed by the M-1 Light Industrial District's "stacked" zoning;
- There are several light industrial projects anticipated for Central Maui; however, there are no proposed developments for Kihei.

B. PURPOSE OF THE REPORT

The purpose of this report, as of November 28, 2018, is to generate a market study to be used for the Environmental Impact Statement (EIS) for the proposed State of Hawaii Department of Land and Natural Resources Industrial and Business Park project.

C. INTENDED USE OF THE REPORT

The intended use or function of this report is to provide real property information and real estate market data in support of an Environmental Impact Statement, a State Land Use District Boundary Amendment (Agricultural to Urban), Community Plan Amendment

(Agriculture to Light Industrial), and a Change in Zoning (Agricultural District to M-1 Light Industrial District).

D. CLIENT AND INTENDED USERS OF THE REPORT

The client is Munekiyo Hiraga. Intended users of this report are Munekiyo Hiraga.; State of Hawaii Department of Land and Natural Resources; and the appropriate State and County agencies involved in the proposed land use changes.

E. SCOPE OF THE REPORT

The Consultant has provided a current market study of this project by (a) defining and delineating the market area; (b) identifying and analyzing the current demand and supply conditions that comprise the existing real estate market segment; and (c) identifying, measuring, and forecasting the effect of anticipated developments or other changes on future demand and supply for the target market segment. The market study is developed and prepared in conformity with, and subject to, the requirements of the Code of Professional Ethics and the Standards of Appraisal Practice of the Appraisal Institute, and the *Uniform Standards of Professional Appraisal Practice*.

F. STATEMENT OF COMPETENCY

ACM Consultants, Inc. has been actively involved in the real estate appraisal research and consulting business since 1982. Our business emphasis has focused mainly on the counseling and valuation of residential and commercial properties located within the State of Hawaii. The firm considers itself competent to conduct a market study for a proposed light industrial project in the District of Wailuku, Island and County of Maui.

G. EXTRAORDINARY ASSUMPTIONS AND HYPOTHETICAL CONDITIONS

1. As of November 28, 2018, the Proposed Project is still in the preliminary stages of planning. A Project Site map, prepared by Austin, Tsutsumi & Associates, Inc. and Hawaii Land Design, was provided by the client and offered a visual indication of the proposed layout of the development. The consultant is not liable for any changes in the project plan past this date, nor for information that has not been developed, released or communicated to the Consultant.

2. The Consultant has no control over economic conditions and other international events that could have an effect upon Hawaii's economy and the Maui real estate market. As a result, this report has not made any assumptions regarding

potential conflicts with other nations, or external factors affecting economic conditions here.

3. The counseling report is also subject to standard "Limiting and Contingent Conditions" located in the Addenda.

H. CONFIDENTIALITY PROVISION

The contents of this market study are confidential. Release of this counseling report by ACM Consultants, Inc. is limited to the client and intended users authorized by the client for the intended uses stated above. Any further release of this report, or portions herein, is strictly prohibited and the client accepts the risk and liability for any such release without the previous written consent of ACM Consultants, Inc. Further, the client shall indemnify and defend ACM Consultants, Inc., and its individual consultants/appraisers, from any claims arising out of any such unauthorized disclosure.

I. CERTIFICATION

The undersigned does hereby certify that except as otherwise noted in this consulting report:

1. The Consultant's compensation is not contingent upon the reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value estimate, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this consulting report.

2. The Consultant has no present or prospective interest in the property that is the subject of this report, and no personal interest or bias with respect to the parties involved. Any "Estimate of Market Value" in the consulting report is not based in whole or in part upon the race, color, or national origin of the prospective owners or occupants of the properties in the vicinity of the subject property.

3. The Consultant has no bias with respect to the property that is the subject of this report or to the parties involved with this assignment.

4. The Consultant's engagement in this assignment was not contingent upon developing or reporting predetermined results.

5. Shane Fukuda personally inspected the subject property and is a signatory of this Certification.

6. To the best of the Consultant's knowledge and belief, all statements of fact and information in this report are true and correct, and the Consultant has not knowingly withheld any significant information.

7. No one provided significant professional assistance to the person signing this report.

8. The reported analyses, opinions and conclusions are limited only by the reported assumptions and limiting conditions, and are the Consultant's personal, impartial and unbiased professional analyses, opinions and conclusions.

9. The reported analyses, opinion, and conclusions were developed, and this report has been prepared, in conformity with the requirements of the Code of Professional Ethics & Standards of the Appraisal Institute, which include the *Uniform Standards of Professional Appraisal Practice*.

10. This consulting report is to be used only in its entirety and no part is to be used without the whole report. All conclusions and opinions concerning the real estate are set forth in the consulting report were prepared by the Consultant whose signature appears on the appraisal report, unless indicated as "Review Consultant." No change of any item in the consulting report shall be made by anyone other than the Consultant, and the Consultant shall have no responsibility for any such unauthorized change.

11. The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.

12. As of the date of this report, Shane Fukuda has completed the continuing education program for Designated Members of the Appraisal Institute.

13. Shane Fukuda has performed no consulting services, as an appraiser or in any other capacity, regarding the property that is the subject of this report within the three-year period immediately preceding acceptance of this assignment.

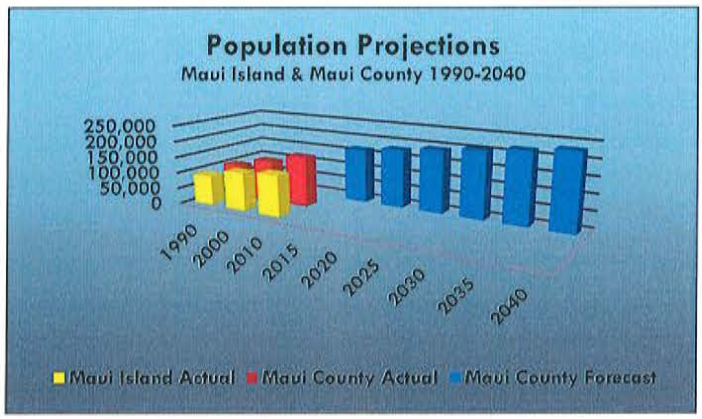
ACM Consultants, Inc.

Shane M. Fukuda, MAI, as Sub-Consultant
Certified General Appraiser,
State of Hawaii, CGA-810
Expiration: December 31, 2019

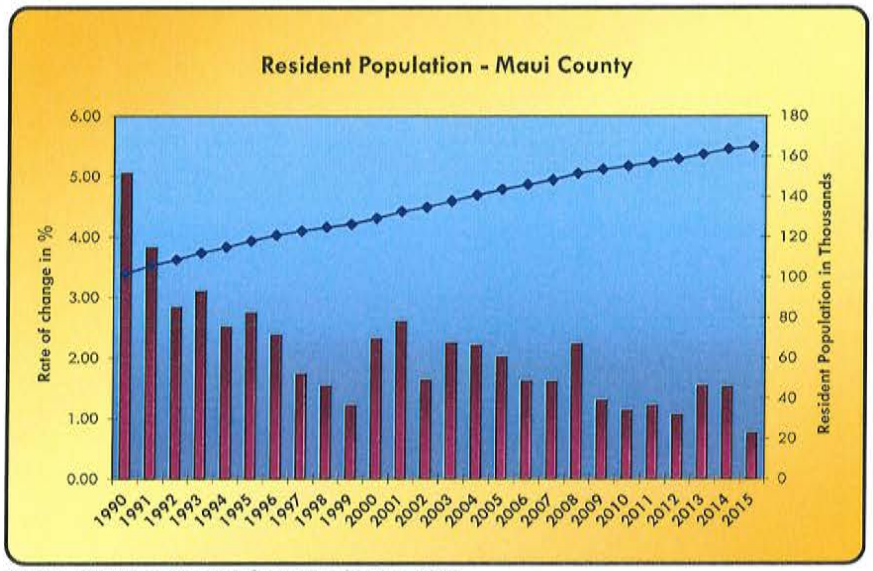
PART II – FACTUAL DATA

A. REGIONAL DATA - MAUI COUNTY

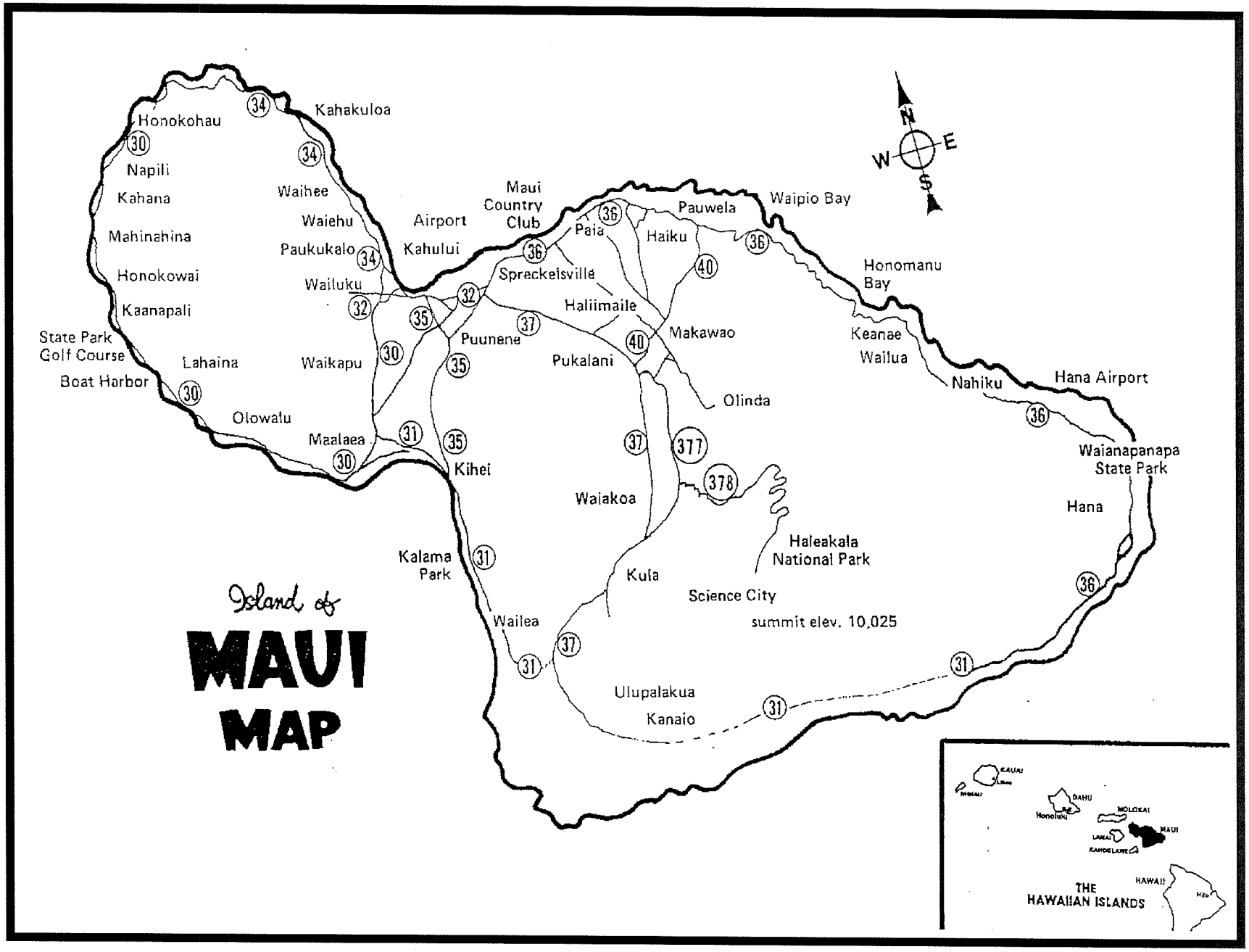
Maui County is the third most populous of the four counties of Hawaii, with a total resident population of 154,924; a change of 20.8 percent from 2000 and 54.1 percent since 1990 (Source: 2010 Census). Maui County consists of the islands of Maui, Molokai, Lanai, and Kahoolawe. Ninety three percent (93%) of County residents live on the island of Maui, which consists of a total of 734.5 square miles, or 470,080 acres. Population projections (Source: State of Hawaii DBEDT Research and Economic Analysis Division, 2012) for Maui County and the Island Maui are illustrated on the table below.



The following graph illustrates the resident population change in Maui County from 1990 through 2015. The graph indicates that Maui's population continues to grow steadily.



Source: UHERO Economic Information Service, 2016


Island of
MAUI
MAP
Honokohau
Napili
Kahana
Mahinahina
Honokowai
Kaanapali
State Park
Golf Course
Boat Harbor
Lahaina
Olowalu
Kahakuloa
Waihee
Waiehu
Paukukalo
Wailuku
Waikapu
Maalaea
Kihei
Kalama
Park
Wailea
Airport
Kahului
Maui
Country
Club
Spreckelsville
Paia
Pauwela
Haiku
Waipio Bay
Haliimaile
Puunene
Pukalani
Makawao
Olinda
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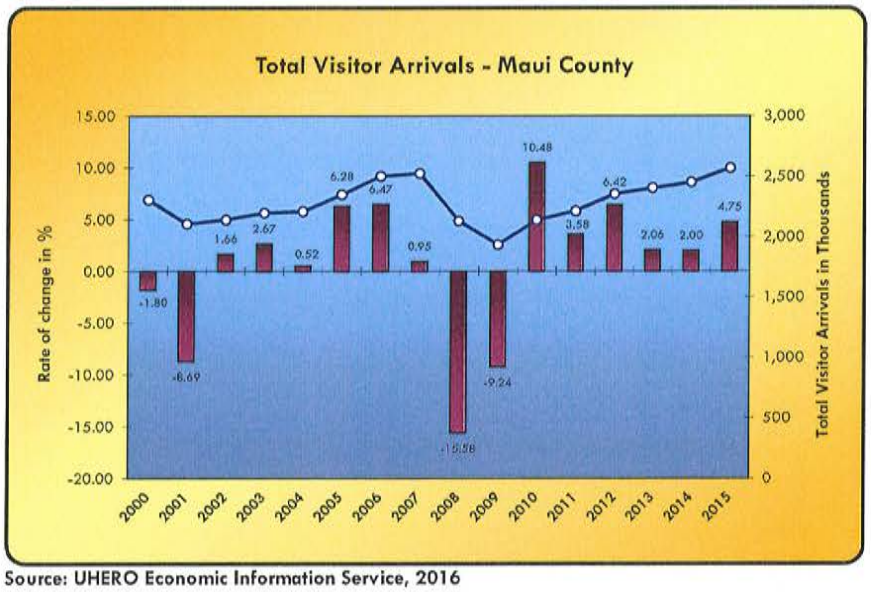
HAWAIIAN ISLANDS

Like all the Hawaiian Islands, Maui, Molokai and Lanai are blessed by warm air temperatures year-round, and ocean waters that range from 72-77°F in winter to 77-81°F in summer. The islands' distance from other continents, the moderating effects of the surrounding water and the tropical location combine to create this pleasant climate. Hawaii's topography, particularly the mountains and valleys and location of each island, contributes to the great variety of microclimates within very small areas. On Maui, the West Maui Mountains and Haleakala are the primary geological features affecting the weather. Due in part to the above geographical factors, Maui, has been selected "Best Island" by readers of Condé Nast Traveler magazine for more than twenty years.

Visitor Industry

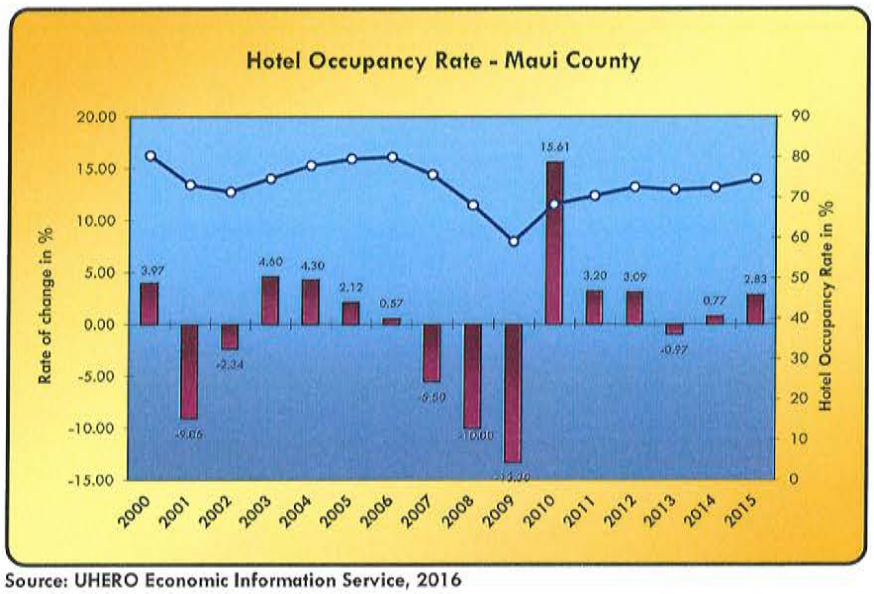
Historically, Maui hotel occupancies typically exceed any area in the state with the exception of Waikiki. Its popularity is due to a number of factors. Maui receives the good fortune of location and climate. The island also has the infrastructure in place to move tourists to a diverse variety of activities, and offers a wide range of visitor accommodations to offer any traveler, from premier, upscale resorts to condominiums available for families and groups on a budget. Resort accommodations on Maui have consistently ranked above other Hawaii resort destinations. In the Condé Nast Traveler magazine, eleven (11) of the "Top 25 Hawaii Resorts" for 2015 were Maui County resorts. The Wailea Beach Villas topped the list; while other Maui County resorts garnering honors included: Montage Kapalua Bay (2nd); Travaasa Hana (3rd); Wailea Beach Villas (7th); The Fairmont Kea Lani (9th); Four Seasons Resort Maui at Wailea (10th); Ritz-Carlton, Kapalua (13th); Four Seasons Resort Lanai, The Lodge at Koele (14th); Grand Wailea (17th); Makena Beach and Golf Resort (20th); Andaz Maui at Wailea Resort (21th) and Hyatt Regency Maui Resort & Spa (24nd).

Cultivating a worldwide image as a premier, upscale tropical island destination, Maui is highly dependent on tourism. The County of Maui spends a significant amount of money to support the tourism industry. Like all industries, the effects of the Great Recession had an adverse impact to tourism. However, in 2010, transition in the economy from recession to recovery began and visitor arrivals to Maui witnessed a 10.5 percent increase. Visitor arrivals on Maui continue to experience year-over-year increases through 2015. The 2,566,140 visitor arrivals in 2015 broke the previous Maui County record of 2,522,040, set in 2007.



Source: UHERO Economic Information Service, 2016

In 2015, Maui County had the second highest occupancy rate of all the Hawaii counties at 74.4 percent, behind Oahu at 85.4 percent. Meanwhile, Kauai showed occupancy of 71.4 percent and Big Island at 66.7 percent. Maui's hotel occupancy rate steadily increased from 2010 to 2012. In 2013 and 2014, hotel occupancy rates in Maui County experienced minimal change with a one percent decrease and a one percent increase year over year, respectively. From 2014 to 2015, hotel occupancy climbed almost 3 percent, continuing its return to pre-recession years.



Source: UHERO Economic Information Service, 2016

Maui offers a variety of tourism activities, including ocean recreation, helicopter tours, biking down Haleakala, zip lining and golf, among other numerous activities. With 120 miles of coastline

and 30 miles of beaches, Maui's ocean recreation includes surfing, body boarding, windsurfing, kitesurfing and stand-up paddle boarding. Snorkeling and scuba diving excursions initiate from shorelines, as well as sailing cruises leaving regularly from Lahaina and Maalaea Harbors.

Agri-tourism continues to gain traction, with Maui Tropical Plantation; Maui's Winery; Alii Kula Lavender Farm; Surfing Goat Dairy; and Ocean Vodka Organic Farm and Distillery being notable examples. The premier theme destination on the island is the Maui Ocean Center. This center, featuring the marine environment of the Hawaiian Islands, is modeled after five other aquarium parks developed by Coral World International. The ocean center is located just behind the Maalaea Boat Harbor, and is easily accessible from Kahului/Wailuku, and the resort areas of Lahaina/Kaanapali and Kihei/Wailea. The Maui Ocean Center anchors the 18-acre Maalaea Harbor Village, which also includes a retail strip shopping center, restaurants and other services.

As the global economy continues to recover, it is anticipated that Maui will continue to be a favored destination for mainland and international tourists. In addition to being a perpetual Conde Nast Reader's Poll awardee, Maui consistently rates has a top island by world-renown travel outlets such as Travel + Leisure, Travelocity and TripAdvisor.

Real Estate

Residential real estate on Maui can be divided into three broad categories (single-family homes, condominiums and residential lots) and five important geographic regions (Central, East, West, South and Upcountry).

All of the neighborhoods have single-family housing and residential lots. However, several neighborhoods such as Kapalua, Kaanapali, and Wailea are comprised mainly of luxury housing. Kahului and Wailuku are where the bulk of Maui's workforce resides. Not surprisingly, there is minimal luxury housing in these communities, while all other areas on the island contain a mix.

Condominium units may be found in all areas of the island, although condominium properties in Upcountry and East Maui are virtually non-existent. South Maui and Central Maui have very few leasehold condominiums. West Maui has a mixture of both fee simple and leasehold condominiums. Areas such as Upcountry and East Maui are made up primarily of agricultural and rural properties. This property type is far less prevalent in all other areas.

Owner-occupied housing on Maui accounts for 56 percent of all occupied housing units. The total housing stock grew at a rate of about 1,000 units a year in the 1980s. The total accelerated to

1,500-2,000 new units in the 1990s, well short of demand. Housing inventory growth remained at about this level prior to 2008, when adverse economic impacts and increasingly stringent land use controls halted much of the new residential construction. Although the population on Maui has continued to grow, housing supply has increased at a slower pace than historic trends. As a result, demand for housing has outpaced supply and home prices and rents continue to rise.

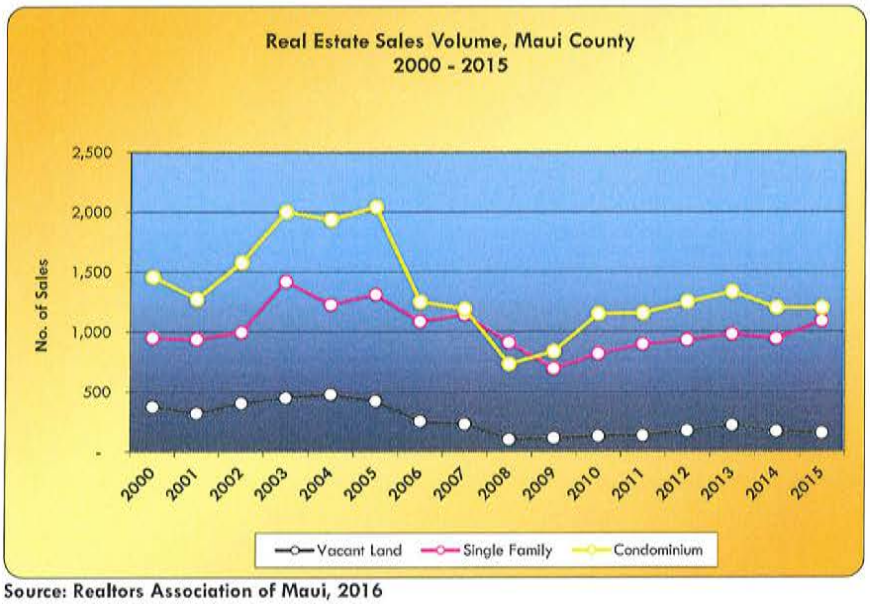
Prices in the Maui residential real estate market peaked in 2006, when the monthly median sale price for a single family home averaged $701,882. Prices declined year over year from 2007 through 2011, with the highest percent decrease of 13.3 percent occurring in 2009. The average monthly median sale price for a single-family home bottomed out in 2011 at $440,160. Since then, prices have increased, with year over year increases to $583,950 in 2015.

30-year mortgage rates in the United States declined steadily from an annual average of 6.4 percent in 2006 to 3.7 percent in 2012. Annual average rates moderately increased to 4 percent in 2013 and 4.2 percent in 2014, before declining to 3.85 in 2015.

The following summarizes a sales volume history for Maui County from 1990 to 2015, which includes resales and new project sales.

Year	Vacant Land	Single Family	Condominium
1990	298	560	1,459
1991	116	430	593
1992	120	382	496
1993	121	361	461
1994	148	404	592
1995	118	331	495
1996	126	451	577
1997	182	507	812
1998	276	641	999
1999	408	965	1,348
2000	372	951	1,456
2001	318	938	1,274
2002	402	997	1,578
2003	447	1,420	2,001
2004	477	1,228	1,935
2005	421	1,311	2,041
2006	251	1,085	1,249
2007	229	1,143	1,188
2008	99	910	730
2009	111	693	834
2010	127	817	1,148
2011	133	898	1,155
2012	173	933	1,248

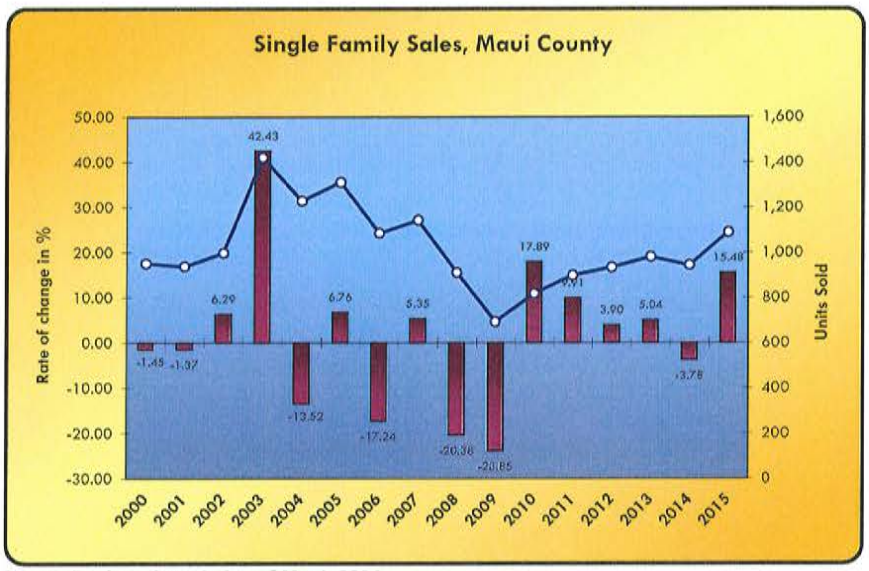
2013	218	980	1,333
2014	167	943	1,199
2015	154	1,089	1,199



Source: Realtors Association of Maui, 2016

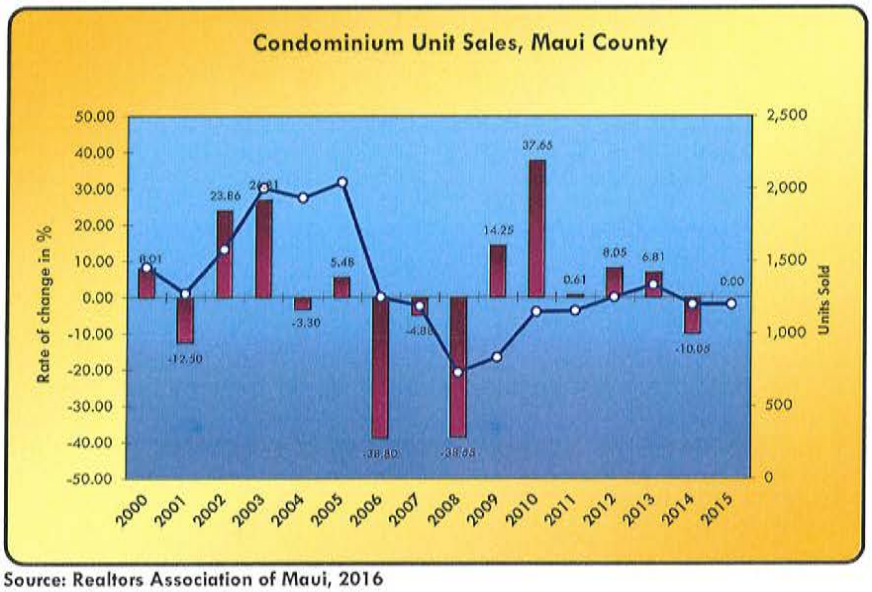
The number of single family home sales increased significantly between 2002 and 2006. Single-family sales saw noteworthy increases in 2003, where the number of single-family sales leaped upwards of 42 percent. There was a 13 percent dip in 2004, followed by a rebound of almost 7 percent in 2005. For 2006, there was a decrease of 17 percent, with a subsequent upward bounce of about 5 percent in 2007. Then, with the eroding economic conditions and financial crisis in 2008 and 2009, Maui County experienced a 20 and 24 percent drop in sales in each of the respective years. This was the biggest decline in sales since 1991, when sales of single-family homes dropped by 25 percent.

From 2010 through 2013, the number of single family sales increased year over year, due to historically low interest rates and improved demand. In 2014, there was a four percent decrease in the number of single family sales, attributed to low supply in the housing market. The availability of a few new subdivisions, coupled with a larger number of listed properties, led to a 15 percent bump in single-family residential sales for 2015. The following graph further illustrates the single-family sales volume history for Maui County from 2000 to 2015.



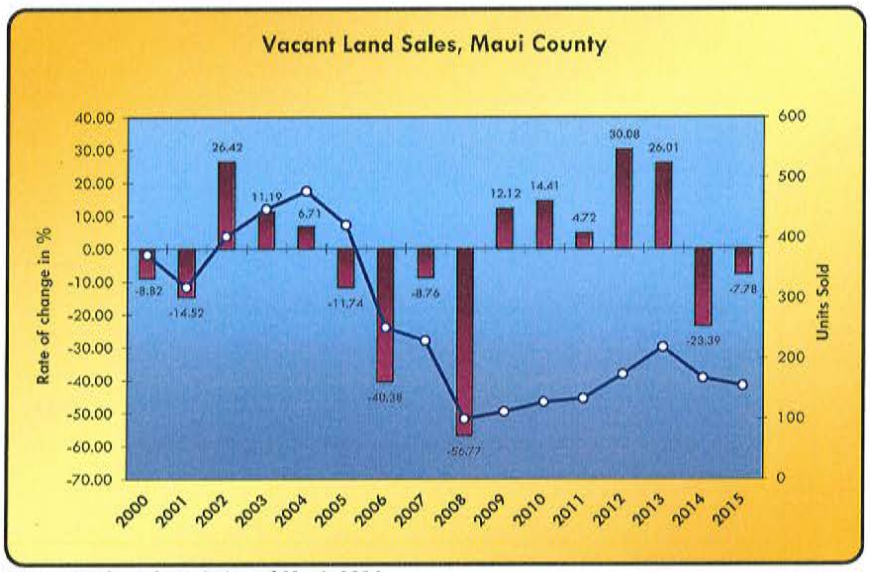
Source: Realtors Association of Maui, 2016

The number of condominium unit sales peaked in 2005, with 2,041 sales. A decrease in the number of condominium unit sales occurred in 2006, with a 39 percent decrease from 2005. The number of condominium unit sales continued to decrease year over year through 2008, with 730 sales. 2009 experienced an increase of 14 percent from 2008, and in 2010, the number of condominium unit sales were up by 38 percent from 2009. Growth in this category of homes continued year over year through 2013. In 2014, there was a 10 percent decrease in the number of condominium unit sales. Interestingly, the same number of condominium units sold in 2015. The following graph further illustrates the condominium sales volume history for Maui County from 2000 to 2015.



Source: Realtors Association of Maui, 2016

From 2005, the number of land sales on Maui followed a downward trend until hitting a low of 99 sales in 2008, a decrease of 57 percent from 2007. The first increase in four years was witnessed in 2009, as vacant land sales volume increased by 12 percent and again increased in 2010 by 14 percent. In 2011, the volume of land sales increased again but at a slower pace of about 5 percent. In 2012, the pace of sales increased with 30 percent greater sales volume than in 2011, while 2013 saw sales increase at a rate of 26 percent over 2012. In 2014, a decrease in the number of vacant land sales decreased by 23 percent from 2013. This was followed by an additional decline of 8 percent in 2015. The following graph further illustrates the vacant land sales volume history for Maui County from 2000 to 2015.



Source: Realtors Association of Maui, 2016

Median prices continued to rise until 2006 for all categories of real estate. The average monthly median prices in 2006, for land parcels, single-family homes and condominium units, increased 29 percent, 4 percent and 34 percent, respectively. In 2007, average monthly median prices for land and single-family property decreased 19 percent and 11 percent, respectively, while the average median price for a condominium increased 6 percent. It should be noted that the 2007 average condominium unit median price was heavily influenced upward by December closings in Honua Kai, a luxury oceanfront property. For 2008, the average monthly median prices for single-family homes retreated by 8 percent. Vacant land saw a gain of about 31 percent over 2007, while condominiums decreased by 6 percent. In 2009, vacant land median price decreased by almost 18 percent, while single-family homes and condominium units decreased by 13 and 15 percent, respectively. As the economic recession continued into 2010, the median sales price for all property types declined. Vacant land showed the largest drop of 33 percent from 2009 levels, as single

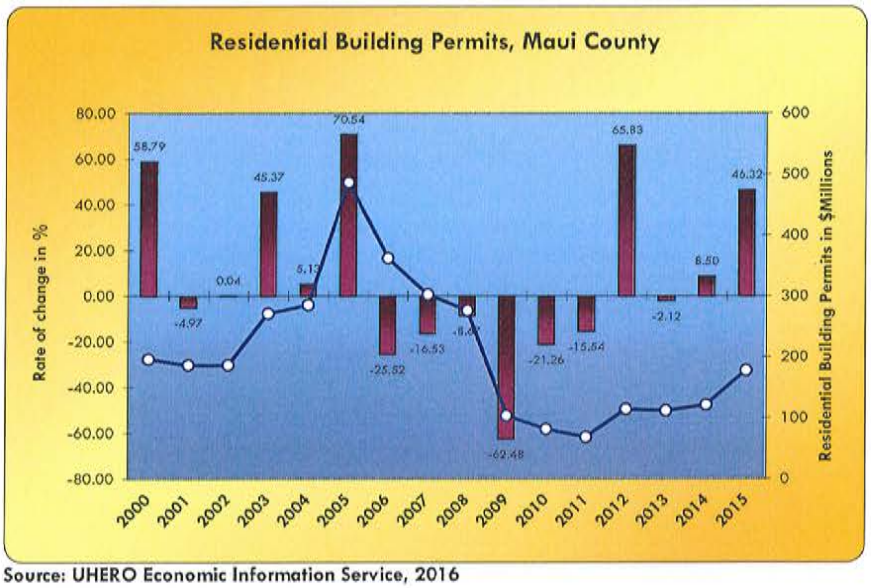
family and condominium unit properties decreased by 7 and 16 percent, respectively. Median prices continued to decline in 2011, with condominium units leading the pack at 20 percent, vacant land at 16 percent, and single-family home prices at 4 percent. Since 2012, the average monthly median price for single-family residences has been recovering although it is still far from the market peak of 2005-2006. On the other hand, the 2015 average monthly median price for condominium units surpassed the peak in 2007 and 2008. This is attributed to the fact that almost 10 percent of the sales consist of resort condominium units of $1,000,000 or higher. Vacant land average monthly median prices increased between 2012 and 2014, before dropping 9 percent in 2015.

Construction and Development

Maui's construction industry is gradually recovering, with building permit values still well below pre-recession levels. Notable Capital Improvement projects for Maui include expansion of the Kahului Harbor facility; new access roadway, consolidated rental car facility and renovation for Kahului Airport; the Central Maui Regional Park; a new high school in Kihei; and continuation of the Lahaina Bypass.

The total value of private permits decreased by 11 percent in 2013 from 2012, and increased by 36 percent in 2014. For 2015, the total private permit value jumped 65 percent. Residential building permit values increased by almost 9 percent from 2013 to 2014. This was followed by a 46 percent gain in 2015. The Additions and Alterations category declined by 35 percent in 2015 after experiencing a 150 percent jump from 2013.

The following graph illustrates the trend of residential building permits in Maui County from 2000 through 2015. As shown, residential permit values peaked in 2005 at the height of the real estate market. Although the Great Recession has played a big part in the decrease of construction of residential properties; the enactment of two ordinances- the Workforce Housing Ordinance (December 2006; revised 2007, 2008, 2010, 2014 and 2015) and the Water Availability Ordinance (December 2007; revised 2011, 2012, and 2014), which have forced stringent requirements on developers, have also greatly affected construction on Maui.



Source: UHERO Economic Information Service, 2016

In Central Maui, most of the new residential construction is within the Kehalani and Maui Lani project districts. Ongoing projects in Kehalani are multi-family condominiums developments The Villas and Kamani. In March 2016, D.R. Horton-Schuler Homes purchased approximately 20 acres within the project district and plans to build a subdivision with 88 single-family residences.

Current Maui Lani housing projects are New Traditions and The Parkways. Both are single-family residential subdivisions. In November 2015, Gentry Homes purchased approximately 50 acres for 350 to 400 new housing units, both single-family residences and condominium units.

Some of the Kihei residential developments underway include 100 percent affordable low-rise condominium complex Kalama Kai; stacked-flats and townhouse condominium workforce units at Kamalani and luxury low-rise condominium units at Keala O Wailea. Makalii is a proposed Wailea luxury townhouse project.

Kahoma Village, a mixed single-family residential and townhouse development will be added to the West Maui upcoming inventory, as will Wailele Ridge, a multi-plex townhouse condominium project in Napili. In June 2016, Maui Land & Pineapple sold its 304-acre entitled workforce housing project to an undisclosed buyer.

In 2015, Commercial and Industrial category experienced a strong year of growth, with a 226 percent increase of permit value over 2014. The sizable gain is primarily attributed to two large West Maui projects, Westin Nanea Ocean Villas and West Maui Village, as well as Wailea's Residence Inn by Marriott.

Maui Business Park, Phase II is experiencing strong developer sales, with approximately 35 percent of its 145 acres of salable lot inventory already purchased. Ground has already been broken for a Lowes Home Improvement center and a wholesale irrigation supply company. Puunene Shopping Center, with anchor Target already open, is the largest ongoing project in the business park.

Retailing

In March 2015, a 141,000 square foot Target store celebrated its grand opening within the Puunene Shopping Center. The retail center will offer a total of 275,000 square feet of leasable space upon completion.

Maui Lani Shopping Center is a 103,000 square foot center that was completed in 2013. This property is located at the corner of Maui Lani Parkway and Kaahumanu Avenue across the street from Kaiser Medical Maui Lani and Baldwin High School. The center is anchored by a 59,000 square foot Safeway and leasing of the remaining leasable space has seen increased demand since 2015.

Kehalani Village Center is situated in Wailuku and was completed in 2012. The project consists of fee simple commercial land condominium units. Existing businesses consist of Longs Drugs, Foodland, McDonalds and Aloha Petroleum gas station.

Wailea Gateway Center opened in 2012 and is the most recent retail complex addition to South Maui. It contains almost 32,000 square feet of leasable restaurant, retail and office space.

The Krausz Companies, Inc. is looking to develop the $72,000,000 Downtown Kihei project on approximately 27 acres in central Kihei. The proposed mixed-use development received its zoning change and community plan amendment entitlements in July 2015. Downtown Kihei is slated to have over 263,000 square feet of gross leasable area, including a 44,000 square foot movie theater. In addition to commercial retail/office space, the project will be anchored by a four-story select service hotel with 150 rooms.

The former Lahaina Center, located on Front Street, was extensively renovated and reopened in 2013 as The Outlets of Maui. The 148,000 square foot mall is Maui's only outlet mall and the world's only outlet mall located in a historic oceanfront location. Retailers include Michael Kors, Coach, Gap, Carter's, Banana Republic, Crocs and Skechers.

In Kaanapali, Whalers Village is undergoing an extensive renovation and expansion. This oceanfront center features retailers such as Duty Free Shoppers, Louis Vuitton, Prada, Loewe and other high-end shops.

Agriculture

Agriculture on Maui has historically been dominated by larger operations like Maui Land & Pineapple Company and Alexander & Baldwin's Hawaii Commercial and Sugar (HC&S).

HC&S, Hawaii's only remaining sugar operation, ceased commercial sugar cane production at the end of 2016. Citing continued annual losses, the closure signaled the end of an era that supported the islands for generations. HC&S continues to consider options for repurposing their fields with diversified agriculture, potential biofuels and other energy alternatives.

Maui's other large agricultural crop, pineapple, has experienced its own woes over the past decade. In December 2009, Maui Land & Pineapple Company announced that it would be shutting down its agricultural arm, citing continued annual losses. A new company, Haliimaile Pineapple Company, was formed the following week and was able to take over a portion of the pineapple operations.

In addition to pineapple cultivation, Maui also offers opportunities for agricultural diversification by small farmers and large agribusinesses. Top among new agricultural products are: papaya, cut flowers, coffee, Kula onions and strawberries, and Chinese cabbage from Kula. Molokai offers its sweet potatoes, Molokai lettuce and alfalfa, as well as taro.

Agri-tourism is a growing business market. Maui Pineapple Tours; Maui Tropical Plantation; Maui's Winery; Alii Kula Lavender Farm; Surfing Goat Dairy; and Ocean Vodka Organic Farm and Distillery offer tours and product tasting as a way to showcase retail products.

High-Tech

Maui's contribution to Hawaii's high-tech industry remains pre-eminent in the state. It also represents genuine diversification of the economy. The Maui Research and Technology Park in Kihei has its entire infrastructure in place, and has five office buildings, totaling 180,000 square feet of lab, office and data center space. Most important, it houses one of the country's most powerful supercomputers. The park now hosts over 20 companies and approximately 400 employees on 415 acres.

With access to one of the most powerful supercomputers in the world, funded by the U.S. Air Force, the Maui Research and Technology Park is continuing its efforts to diversify the Maui economy into something fundamentally different from what exists in the county or anywhere else in the state.

The park is sticking to its long-run strategic plan to capitalize on its location at the center of the Pacific Basin. Its extensive fiber-optic network to the U.S. Mainland makes it one of the most fiber-rich

environments in the world, greater than many facilities actually located on the Mainland.

Build-out at the park has been slower than anticipated. Besides the five office buildings previously discussed, the only additional development has been a production facility for local beer manufacturer Maui Brewing Company, completed in 2014. Kihei Charter School has secured funding to build a new campus within the park. However, a proposed skilled nursing and intermediate care facility was denied a certificate of need in March 2015. To stimulate grown within the subdivision, the developers have petitioned the county to amend the Kihei Research and Technology Park District zoning ordinance. Notable changes being sought are a wider array of allowable uses and smaller minimum lot sizes.

County Government

Maui County is unique in having several inhabited islands in its jurisdiction: Maui, Molokai, as well as Lanai, and the uninhabited island of Kahoolawe.

Maui County has an elected Mayor and County Council, and the Liquor Control Commission is semi-autonomous with appointed directors. Although all courts are conducted by the State, the County is responsible for prosecution and the mayor appoints the prosecutor. The council has nine members, each residing in one of nine districts; however, voters cast ballots for all nine seats. Unlike other states, Hawaii has only two layers of government: State and County. The State is responsible for many functions that elsewhere come under the jurisdiction of municipalities, such as schools, hospitals, and airports. Also, unlike other states, Hawaii has statewide zoning implemented by the State Land Use Commission. The County has zoning authority within the boundaries established by the commission.

The lack of affordable housing continues to be a concern within the County of Maui. Maui is one of the most expensive counties for single-family home buyers. A record high median price of $780,000 was set in July 2006 for a single-family home. Since then, the median price for a single-family home fell through 2011, with an average monthly median sales price of $440,160 in 2011. From 2012 to 2014, the average monthly median single-family sales price increased year over year to $583,953 in 2015. According to the latest State of Hawaii Data Book, 41.4 percent of the households pay more than the recommended limit of 30 percent of their income on housing. In fact, 27.1 percent pay more than 40 percent on housing.

This heightened effort by the County resulted in the enactment of the Residential Workforce Housing Policy (Chapter 2.96, Maui County Code) on December 5, 2006. This ordinance has had a profound effect on residential development since its passage. The

subsequent reduction in proposed projects had many in the building and real estate industries questioning whether the ordinance created too much of an obstacle for developers.

In an effort to stimulate residential construction, the housing policy has undergone revisions by the County Council in 2007, 2008, 2010 and 2014. The current version, Ordinance 4235, became effective on July 27, 2015. In summary, the Residential Workforce Housing Policy is triggered by the creation of 10 or more lots, lodging units, time share units, or dwelling units, excluding farm labor dwellings or a second farm dwelling. The ordinance stipulates that prior to subdivision approval or issuance of a building permit, a residential housing agreement is required with the County Department of Housing and Human Concerns. To satisfy the requirements of the ordinance, a developer may a) provide single-family dwelling units, two-family dwelling units, or multi-family dwelling units for sale as residential workforce housing within the project's community plan area; b) provide multi-family dwelling units for rent as residential workforce housing units within the community plan area; c) convey such units to a qualified housing provider; d) pay an in-lieu fee equal to the difference in unit costs for a three bedroom single-family dwelling unit at one hundred percent and a three bedroom single-family dwelling unit at one hundred sixty percent of median income for a family of four pursuant to HUD affordable sales price guidelines; or d) dedicate improved or unimproved land in-lieu of residential workforce housing units, subject to the approval of the director and the council by resolution.

The Water Availability Policy (Section 14.12, Maui County Code) is another law that has made an impact on the development community. On December 14, 2007, the County of Maui passed into law Ordinance 3502. Landowners and professionals in the development community have been openly critical of the ordinance, some calling it a de facto moratorium on housing. Not surprisingly, sales of vacant development lands have been impacted.

The water policy has undergone revisions by the County Council in 2011 and 2012. The current version, Ordinance 4158, became effective on September 19, 2015. In summary, no applicable subdivision shall be approved, unless prior to approval of subdivision construction plans the Department of Water Supply (DWS) director has provided written verification of either: (1) a County water meter or water meter reservation; or (2) the receipt of an approved engineering report for a long-term, reliable supply of water for the subdivision. Exemptions include a) subdivisions that do not require water service, such as, but not limited to, family subdivisions; b) consolidations and concurrent re-subdivisions that do not create additional developable lots, road widening lots, utility lots, or easements for access or utility purposes; c) subdivisions that

will not be regulated as a public water system pursuant to department of health rules, provided that this exemption shall not apply to any subsequent subdivision of any of the resulting parcels; d) infill development, provided that this exemption shall not apply to any subsequent development or subdivision of any resulting parcels; e) residential workforce housing units, developed by a qualified housing provider, within the service area of the DWS central or west Maui water system; f) residential development projects with one hundred percent affordable housing units and are within the service area of the DWS central or west Maui water system; or g) public or quasi-public development projects and related subdivisions that are within the service area of the department's central or west Maui water system. Time will tell if the latest versions of both ordinances will help to achieve their intended goals.

B. NEIGHBORHOOD DESCRIPTION

Since real estate is fixed in location, its marketability and rentability are strongly influenced by economic and social trends in its immediate environment. The continuing attractiveness of this neighborhood environment to potential users and tenants, and its competitive relation to those of substitute properties, must therefore be evaluated and forecast by the consultant. In particular, perceived neighborhood trends affect both the quality and quantity of the revenues the subject property can reasonably be expected to generate.

A neighborhood of income-producing properties is a geographic area characterized by similarity of uses and/or users, within which any change has a direct and immediate effect on the subject property and its value.

The Proposed Project is designated by the Kihei-Makena Community Plan, but is considered to be in the Wailuku District by the State of Hawaii. The primary industrial market is anticipated to originate from Central Maui, with Kihei being a secondary market.

Central Maui is defined by physical and man-made boundaries, and encompasses an area known as Wailuku-Kahului. This region is located on the north shore of the Island of Maui and encompasses the civic and business centers of Wailuku and Kahului. The island's major seaport and primary airport are also contained within the boundaries of this region. The surrounding agricultural land of Central Maui, and the eastern half of the West Maui Mountains, is also within the Wailuku-Kahului neighborhood.

The boundaries of the Wailuku-Kahului region are the northern shoreline from Poelua Bay to Baldwin Park on the north, Kailua Gulch and Lowrie Ditch on the east, Spanish Road to Waikapu Road to Honoapiilani Highway to Pohakea Gulch on the south, and the Wailuku Judicial District boundary on the west.

Population is concentrated in the urban centers of the region. Wailuku has maintained its role as the civic-financial-cultural center while Kahului has strengthened its role in recent years as the business and industrial center. In addition to the urban centers of Wailuku-Kahului, the region also includes the more rural settlements of Waihee to the north and Waikapu and Puunene to the southeast. Agricultural lands are adjacent on the lower slopes of the West Maui Mountains and in the central plain south and east of Kahului. This green border is a significant part of the settlement pattern because of its open space and economic value. Kahului Harbor and Airport are major land users along the Kahului shoreline. As major ports of entry for people and goods, they serve as an important center of jobs and economic activity.

The major thoroughfares through Kahului and Wailuku are Kaahumanu Avenue which begins in Kahului and provides primary access to Wailuku as well as Lahaina and Kihei; Hana Highway, which is actually a continuation of Kaahumanu Avenue, leads from Kahului to the eastern or "upcountry" portions of the island; and Puunene Avenue which provides access to all major areas in Kahului and ultimately leads to the new Kuihelani Highway which provides by-pass access to Lahaina and Kihei. The Kaahumanu Avenue also runs into Main Street, and via secondary access, runs into Waiehu Beach Road and Lower Main Street.

Kahului, adjacent to Wailuku, is situated on the northwest portion of the island of Maui, and is the central commercial, industrial and residential area of Maui. Kahului Town contains Maui's major shopping centers, centralized industrial areas, financial institutions, medical office facilities and business offices. Additionally, the Kahului Airport and Kahului Harbor are located in Kahului proper and houses the majority of firms providing various goods and services throughout the island, as well as to Lanai and Molokai. Consistent with its central location, post office facilities, community library, parks, schools (elementary, intermediate, high school and a community college), churches of various denominations, entertainment facilities, food outlets and a fire station are located in Kahului.

Wailuku, at one time, was the heart of Maui's business activities. Decentralization of business to nearby Kahului and lack of maintenance and modernization of buildings to keep up with the new shopping habits brought about a gradual decline. However, since the creation of the municipal parking area in Wailuku, several new buildings have been built or renovated and a rejuvenation of the Wailuku Town is being experienced. The current Community Plan envisions Wailuku as the "governmental, cultural and professional center of Maui". Located in Wailuku are the various government agencies, courts, hospital, major recreational facilities and police station.

Wailuku's Fire Station sits in the heart of Wailuku Town, and until the opening of the Kahului Fire Station, was the only one in Central Maui. Kahului Fire Station is a 21,300 square foot facility that includes two main buildings and is situated on Dairy Road.

The Maui Memorial Medical Center, which is Maui's primary facility of medical and emergency service, is located between the connecting boundaries of Kahului and Wailuku. In 2006, work was completed on a new wing for the hospital. The Wailuku Police Station is also conveniently located nearby. Numerous preschools, elementary, intermediate and high schools are located throughout Kahului and Wailuku, with the University of Hawaii Maui College located on Kaahumanu Avenue.

The Maui Arts and Cultural Center was built in 1993 and includes a 1,200-seat theater, a 250-seat studio theater, art gallery, meeting rooms, dance studios, event lawn, administrative offices and a restaurant/gift shop. In 2011, the original stage that serviced the 5,000 person grass amphitheater was replaced by the $13 million-dollar, state-of-the-art, Yokouchi Pavilion. The Maui Arts and Cultural Center sits on 12-acres at Keopuolani Park, which is located between the University of Hawaii Maui College and the Maui Nui Botanical Garden.

In order to fully understand and appreciate Kahului and Wailuku's potential for expansion, as well as factors that could limit the growth of this region, a brief summary of recent or proposed developments in these Central Maui districts along with a few important issues facing future development are in order.

RESIDENTIAL

The residential districts surrounding these two centers are significantly different in character. Wailuku Town is comprised of older residential areas, intermixed with business uses, varying lot sizes, and a more haphazard street pattern representative of older subdivisions. Surrounding Wailuku Town are more modern residential subdivisions, primarily within the Kehalani Project District. The residential areas in Kahului are also varied. The older projects feature wide curvilinear streets and larger lots; whereas the newer subdivisions, primarily within the Maui Lani Project District, features smaller lots, narrow roadways, and some zero lot line development. There are also several gated communities with golf-course frontage.

Kahului

In Kahului, the major residential area is represented by Alexander & Baldwin, Inc.'s Kahului Town Development. This subdivision consists of 14 increments that were built between 1951 and 1981. There are a total of 3,400 lots within the 14 increments. Kahului Town is distinguished as the first planned "new town" in Hawaii to provide quality housing at affordable prices.

Today, Kahului Town is a bustling residential community. The ongoing Maui Lani Project District development will include up to 3,000 new residential units, ranging from executive golf homes to affordable units and span 1,000 acres on the south side of Kahului and east side of Wailuku. In addition to single-family and multi-family residential units, the Maui Lani development includes a golf course, churches, a school and a recreational center. Already, several phases have been constructed and sold over the past several years including The Greens, The Grand Fairways, The Bluffs, The Islands, Sandhills Estates, Legends and Na Hoku. Ongoing developments in Maui Lani include two single-family residential subdivisions, Traditions and Parkways.

Wailuku

In Wailuku, the older residential homes are mixed with small businesses throughout central Wailuku Town. Additionally, there are numerous residential subdivisions on the outskirts of Wailuku Town. The original Wailuku Heights subdivision was extended by two exclusive and prestigious phases. Once verdant pastureland, Wailuku Heights is nestled in the West Maui Mountains and offers underground utilities, scenic views and a landscaped park.

The rural communities of Waiehu and Waihee consist of single-family residential subdivisions including Waiehu Heights, Waiehu Terrace and Oceanview Estates. The State of Hawaii Department of Hawaiian Homelands' Waiehu Kou subdivision was built over several phases and sits between Waiehu and Waihee.

Another unique subdivision that was constructed in the Wailuku area is Wailuku Country Estates. The two-acre minimum agricultural lot subdivision encompasses the older Puuohala Camp neighborhood, just north of Wailuku Town.

Residential development has also expanded southerly to Waikapu, a small community in Wailuku proper. On the western side of Honoapiilani Highway are the Waiolani Elua, Waiolani Mauka and Waiolani Pikake single-family residential subdivisions. Meanwhile, Waikapu Gardens and Waikapu Gardens II, both 201H affordable housing single-family residential subdivisions, are located on the eastern side of Honoapiilani Highway.

Below the Wailuku Heights neighborhood is the Kehalani Project District. Completed single-family residential developments in this master-planned community include Kaimana, Halemalu, Nanea, Olena, Ohia, Maunaleo, Akolea, Koa and The Cottages subdivisions. Existing multi-family residential condominiums are Kehalani Gardens, Iliahi, Hoolea Terrace and Milo Court. The Villas and Kamani are ongoing condominium projects.

COMMERCIAL

Commercial development in Kahului has concentrated along the major thoroughfares in strip fashion, while Wailuku's main commercial activity has congregated with the central core of the town. As part of the Kehalani and Maui Lani Project Districts, commercial expansion has become more widespread. The region has recovered from the impacts of the Great Recession and demand for commercial space has rebounded. Due to their central location, Kahului and Wailuku are anticipated to have strong commercial demand over the long-term future.

Kahului

There are four existing shopping centers in Kahului. The largest center, Queen Kaahumanu Center, opened in 1973 and had 300,000 square feet of gross leasable area. Extensive renovations were completed in 1995, which included a two-level shopping

wing, a six-screen movie theater, expanding the major stores, renovating the existing mall and adding a parking structure and access road. The center currently has over 570,000 square feet of gross leasable area, anchored by Macy's and Sears, as well as a standalone Foodland supermarket.

The Maui Marketplace on Dairy Road has over 275,000 square feet of leasable area and home to Office Max, Old Navy, Petco, Pier One Imports, Burger King and Starbucks Coffee, among others. Built in 1997, the center was modeled after Oahu's successful Waikele Center.

Maui Mall, opened in 1971, contains a gross leasable area of 217,640 square feet on a 25-acre site. It is anchored by tenants such as Whole Foods and Longs Drug Store, in addition to the Maui Mall Megaplex by Wallace Theater Corporation. In 2015, the center was expanded to its current configuration and a standalone T.J. Maxx store opened for business.

Kahului Shopping Center is the oldest retail complex of the group. Opened in 1951, a substantial amount of the center was destroyed by fire in 2005. There are plans to redevelop the entire block as Kahului Town Center. However, the status of this project is unknown.

A new shopping center is currently being developed in Kahului at the corner of Puunene Avenue and Hookele Street. Puunene Shopping Center is slated for over 275,000 square feet of retail space, anchored by a 141,000 square foot Target. Target, which opened in March 2015, is the only occupied space other than a Verizon Wireless tenant on a different building pad cluster.

In addition to these centers, Kahului is home to other large retailers including Costco, Home Depot, and Walmart. All of the major financial institutions and large automobile dealerships are also located in Kahului.

Wailuku

Historic Wailuku Town is concentrated in an area centered by the intersection of Market Street and Main Streets. This neighborhood is characterized by older, low-rise buildings consisting of small, individual shops and offices. Civic uses surrounding this area of Wailuku include the State Office Building, the County office buildings, and the judicial building.

The town is home to numerous professionals in the fields of architecture, engineering, law, financial management, real estate and banking. Notable office buildings in Wailuku include One Main Plaza, Wailuku Executive Center, Maui Realty Suites, the Trask Building, and Wells Street Professional Center. Land use in the Wailuku business district is regulated by the Wailuku Redevelopment Area Zoning and Development Code.

Outside of Wailuku Town, there are two ongoing retail developments in Maui Lani and Kehalani. Maui Lani Shopping Center is a 103,000 square foot retail facility in Wailuku, anchored by a 59,000 square foot Safeway store. Completed in 2013, the center's other tenants include Supercuts, Ululani's Hawaii Shave Ice, Domino's Pizza, Anytime Fitness and several other local retailers and professional services providers. Kehalani Village Center was developed with Longs Drugs as its first tenant. An Aloha Petroleum gas station was completed in 2013, and a Foodland supermarket opened in June 2014. A McDonald's restaurant opened in March 2015 next to Longs Drugs. Other land condominium pad sites are available for sale.

INDUSTRIAL

Vacant industrial has typically been difficult to acquire, due to the lack of inventory in the market. Much of the vacant land in Central Maui's industrial parks is being held by business owners, some of whom are waiting for more ideal conditions to build new facilities. Others may be looking forward to the peak in the real estate market to put their property up for sale. However, the same economic downturn that significantly impacted demand for commercial space in Central Maui took its toll on industrial space. Vacancies rose, while at the same time warehouse rents and land prices declined. Market rebound has been evident since 2012, as there has been greater sales and leasing activity.

Kahului

There are several industrial parks in Kahului, but the largest and most established of them all is the Maui (Kahului) Industrial Park, which is bordered by Hana Highway, Puunene Avenue, Dairy Road and Kamehameha Avenue. It includes low-rise warehouse and commercial uses and is occupied with a mixture of industrial, retail and office tenants.

Maui Business Park, Phase I-A and I-B has also attracted commercial, office and industrial users along Dairy Road and Hookele Street. Site infrastructure for Maui Business Park II was completed in 2012. The project adds approximately 145 salable acres of light industrial land surrounding the first phase and across Hana Highway. Approximately 35 percent of its salable lot inventory already purchased. Buyers have primarily been industrial retail owner-users, such as car dealerships. In addition, the County of Maui purchased seven adjacent lots to build a public services complex and American Savings Bank will develop their Maui main branch on a consolidation of two lots. Already open for business are a Lowes Home Improvement center and a wholesale irrigation supply company. Puunene Shopping Center, with anchor Target already open, is the largest ongoing project in the business park.

Other industrial subdivisions include the Airport Triangle on about 13 acres and the 36-lot Kamehameha Parkway No. 2. Although zoned for heavy industrial use, both subdivisions are primarily commercial in nature. The leasehold Central Maui Baseyard is situated along Maui Veterans Highway in Puunene. Pacific Rim Land is in the process of developing a M-3 Restricted Industrial District subdivision off Kamaaina Road and Firebreak Road, also in Puunene.

Wailuku

Existing industrial subdivisions in Wailuku include Wailuku Industrial Park, The Millyard, Waiko Baseyard and Consolidated Baseyard. Wailuku Industrial Park is an improved light industrial subdivision with 74 fee simple lots off of Lower Main Street in Wailuku. Lots range from 10,106 square feet to a parcel 3.089 acres in size. This subdivision is approximately 95 percent developed and includes the retail Wailuku Town Center anchored by Sack 'n Save.

The Millyard was developed in 1985 as an improved light industrial subdivision located at the old Wailuku Sugar Mill site. This industrial subdivision contains 57 lots and is home to the Wailuku Post Office which opened during the late-1990s. Approximately 84 percent of this subdivision has been developed with a mixture of commercial and light industrial uses. The Millyard Plaza is one of the largest complexes in this subdivision. Also, several dentists and veterinarians have seen fit to build their own free-standing facilities in The Millyard, which has developed into more of an office park than an industrial center.

Completed in 2006, the Waiko Baseyard in Waikapu consists of 19 lots on approximately 15 acres of land. This subdivision was immediately sold prior to subdivision completion. Consolidated Baseyards, also in Waikapu, was completed in 2007. Built on about 23 acres of land, the 35 lots in this light industrial park saw very strong interest and were sold quickly. The majority of purchasers within both subdivisions were local business owners who intended to relocate their operations from existing Central Maui industrial subdivisions. These subdivisions were geared toward true industrial users.

The most recent development in the Wailuku area is the Maui Lani Village Center. This project completed construction in 2009 and features 78 lots zoned Village-Mixed Use Commercial/Residential. This zoning allows for a mixture of commercial, industrial, and residential use on each property. Existing businesses in the subdivision include GP Roadway Solutions, Hawaii Cataract Laser Center, Paradise Beverages, Oceanic Time Warner Cable, Group Builders, Commercial Plumbing, Marmac Ace Hardware, Mako's Mart/Maui Lani 76 gas station and Menehune Water. The office buildings in the project's "Professional Row" are being completed. Kula Produce is a future development in this subdivision. In

February 2014, a Walgreen's store opened at the corner of Kuikahi Drive and Waiale Road.

CONCLUSION

All public utilities including electricity, water, telephone, and sewer service are available in Kahului and Wailuku, as is police, fire and ambulance services. Propane gas is not a public utility, however, is available. All charges for public services are standardized for Central Maui, as well as for the Island of Maui.

With public transportation growing steadily on Maui, Kahului and Wailuku are easily accessible from most parts of the island. This and the fact that they are central to airport and harbor facilities, commercial and industrial establishments, properties located in this area are ideal.

Due to this region being the center of County, State and Federal offices, as well as community services, properties in these areas are anticipated to be in greater demand in the years ahead. Based on the desirability of this area and forecasted demand here, property values are expected to continue their appreciation in the long-term future.

LAND OWNERSHIP MAP FOR PULEHUNUI REGION

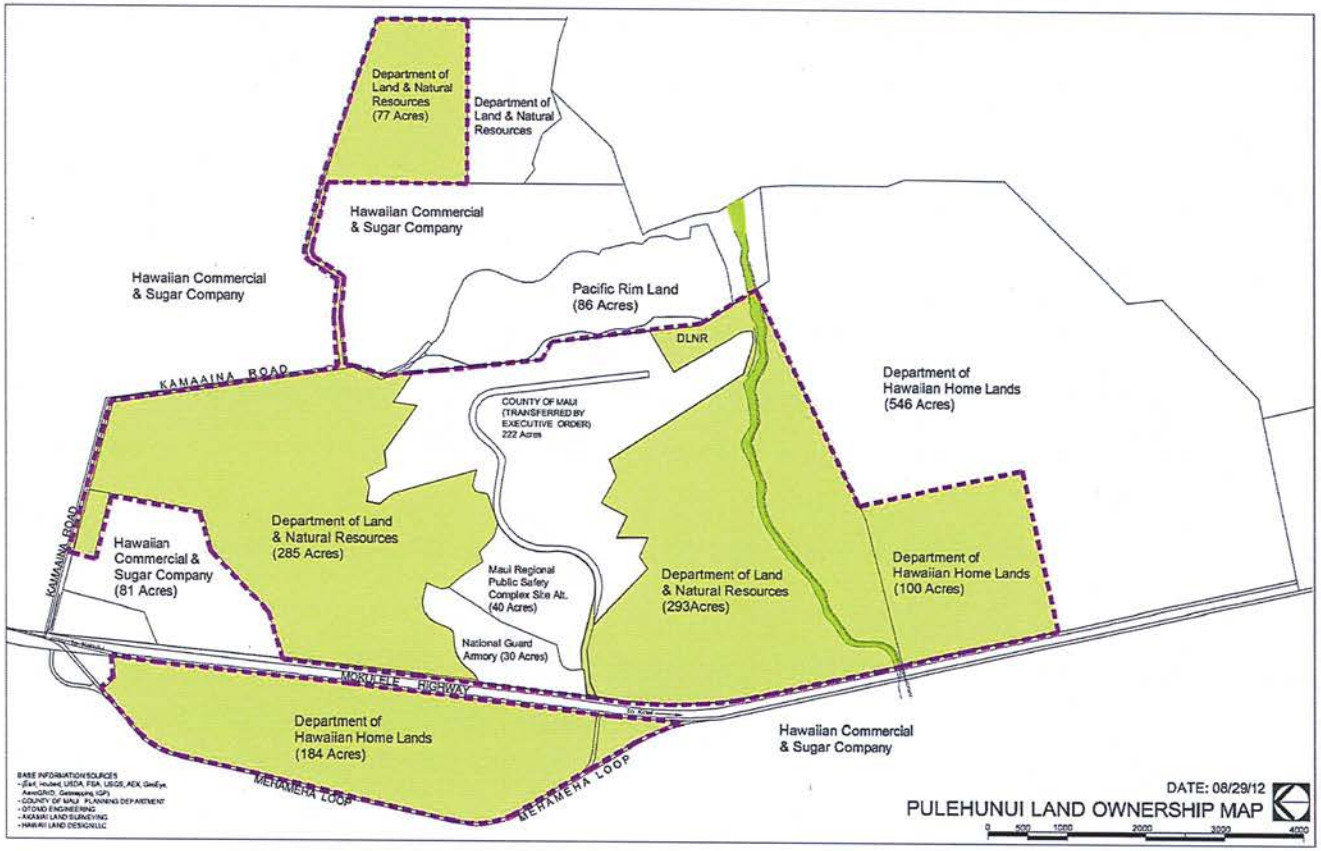


EXHIBIT "B"

1

Source: Munekiyo Hiraga.
Not to Scale...For Illustrative Purposes Only!

NEIGHBORHOOD MAP

C. PROJECT DATA

ENVIRONS

The DLNR Industrial and Business Park (the "Proposed Project) is a planned light industrial subdivision of approximately 280 gross acres, situated east of Maui Veterans Highway, District of Wailuku, Island and County of Maui. Maui Veterans Highway is the primary roadway connecting Kahului to Kihei and runs in a generally north-south direction. It is an asphalt-paved four-lane thoroughfare with two lanes in each direction, divided by a median. Maui Veterans Highway has street lights, as well as overhead and underground utilities. A dedicated bicycle and pedestrian path is situated along the eastern side of the roadway.

Puunene is primarily an agricultural area between the Central Maui and South Maui regions. The majority of the surrounding land has historically been utilized for commercial sugar cane production. Maui Raceway Park, the Hawaiian Cement quarry, the Maui Army National Guard Armory, and the Maui Humane Society are located nearby. To the southeast of the Proposed Project is the Pulehunui Industrial Park, an 86-acre heavy industrial subdivision currently under development. Central Maui Baseyard, a light/heavy industrial yard storage development, is situated approximately one mile to the north. Although the immediate area is unpopulated, the Proposed Project will be conveniently located with respect to its many supporting facilities, such as shopping, schools, employment, residential and recreational areas in both Central Maui and South Maui.

DESCRIPTION OF THE REAL ESTATE:

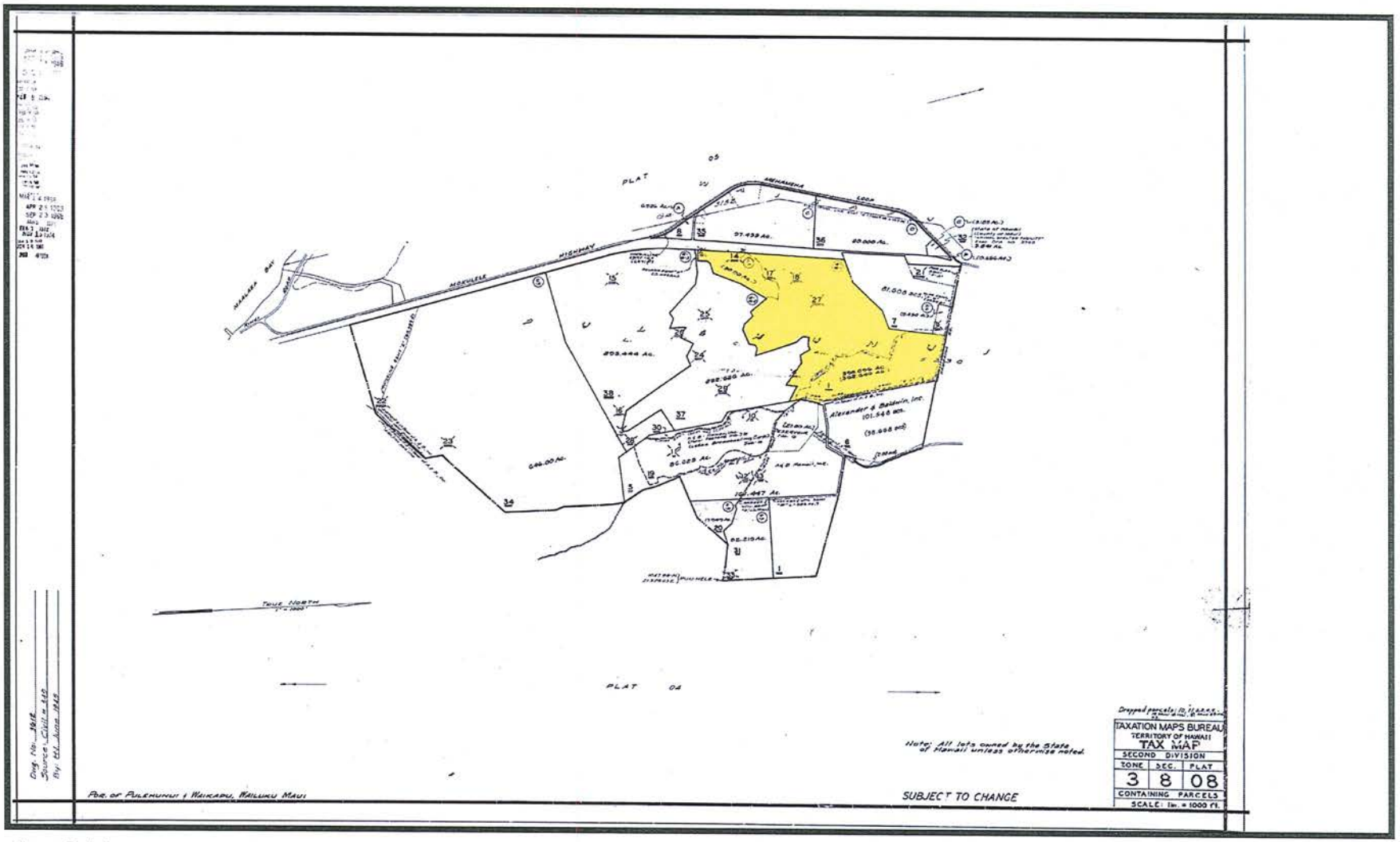
Property Data:

Legal Description: A title report was not available for review by the Consultant. The State of Hawaii Tax Map further identifies the subject's larger parcel as Division 2, Zone 3, Section 8, Plat 08, Parcel 001. The Proposed Project will encompass a 280-acre portion of the 398.10-acre larger Parcel 001.

Census Tract: The Proposed Project is identified as being within Census Tract No. 307.05.

Owner of Record: The owner of record, as identified by County of Maui public records, is the State of Hawaii.

Transaction History: Public records for larger Parcel 001 indicate a Grant of Easement Document recorded with the State of Hawaii Bureau of Conveyances on January 15, 2015 as Document No. A54930477. There are no market conveyances of larger Parcel 001 or the area slated for the Proposed Project within ten (10) years prior to the effective date of this report.



Not to Scale!

TAX MAP – LARGER PARCEL 001

Subject Offering Information: A search of Maui Multiple Listing Service did not reveal any listing of Parcel 001 or the area slated for the Proposed Project within ten (10) years prior to the effective date of this report.

Real Property Tax Assessments and Taxes: The land associated with the Proposed Project is not being individually assessed. Research at the Maui County Real Property Assessment Division revealed the following assessments and taxes for larger Parcel 001 during the tax periods between 2014 and 2016.

Real Property Tax and Assessments

Year	2016	2015	2014
Land (Market):	$7,656,700	$8,651,300	$5,104,800
Land (Agricultural):	$130,300	$1,634,600	$126,800
Building:	$437,400	$400,400	$374,600
Exemptions:	($437,400)	($1,908,200)	($374,600)
Total:	$130,300	$126,800	$126,800
Rate/$1,000 (Agricultural):	$5.66	$5.75	$5.86
R. P. Taxes:	$737.50	$729.10	$743.05

For 2016-2017, the County of Maui Real Property Tax Division records show the market assessment for larger Parcel 001 at $7,656,700; however, the land is being taxed at $130,300, due to its dedicated agricultural use. The building assessment of $437,400 is fully-exempt. The tax rate per $1,000 valuation is $5.66 for Pitt 500 (Agricultural). Based on this rate, the subject's real property tax amounts to $737.50 ($130,300 ÷ 1,000 x $5.66). No known special assessments are on record against the subject property.

Land Use Controls: The Proposed Project is located in a State of Hawaii Land Use designated Agricultural District and is zoned by the County of Maui as Agricultural District. As shown on the Kihei-Makena Community Plan Map and verified with the Maui County Land Use and Codes Division, the subject property is located in an area classified as Agriculture.

Site Description:

Size and Shape: The Proposed Project has a land area of 280 acres and has a highly irregular shape.

Topography and Soil Condition: A physical inspection of the property confirmed that topography is generally level to gently sloping. As derived from an USDA Natural Resources Conservation Service online web soil survey, the Proposed Project appears to have primarily Ewa silty clay loam, 0 to 3 percent slopes (EaA), Ewa cobbly silty clay loam, 0 to 3 percent slopes (EcA), and Ewa cobbly silty clay loam, 3 to 7 percent slopes (EcB).

As indicated on the Agricultural Lands of Importance to the State of Hawaii (ALISH) Island of Maui map, most of the land associated with the Proposed Project is rated "Prime". Meanwhile, the Land Study Bureau (LSB) map depicts an "E" classification or Not Classified for the Proposed Project. These designations are likely due to the historical sugar cane production for larger Parcel 001.

The Consultant has not been provided with soil, subsoil or other engineering studies to determine the load-bearing capacity of the subject; however, based on typical construction in the neighborhood and our knowledge of other properties in the immediate vicinity, the project site is presumed to have stable soil conditions and any drainage problems are assumed to be correctable.

Access: Vehicular access to the Proposed Project from Maui Veterans Highway is currently via Kamaaina Road. The Project Site Map provided to the Consultant depicts future direct access from Maui Veterans Highway.

Easements and Restrictions: As indicated on the State of Hawaii Tax Map, larger Parcel 001 is encumbered by access, electrical and reservoir ditch easements.

Flood Status: Flood Hazard Districts are delineated on Flood Boundary and Floodway Maps and the Federal Insurance Rate Maps prepared by the Federal Insurance Administration and Federal Emergency Management Agency. Larger Parcel 001 is situated on Map Numbers 1500030580F and 1500030557F, by the Federal Emergency Management Agency; revised September 19, 2012, and lies in Flood Zone X. Zone X within Maui County indicates areas determined to be outside of the 0.2 percent annual chance flood plain. Flood insurance is not required for properties within this flood zone.

Utilities: Potable water and sewer service are currently unavailable, while electricity and telephone service are available from overhead lines in the area.

Historic Uses: The land slated for the Proposed Project was partly used for cultivation of sugar cane. Prior to that use, the subject property was part of the Puunene Naval Air Station.

Current Use: On the day of inspection, it was noted the land slated for the Proposed Project was primarily being leased to Hawaiian Commercial & Sugar Company (HC&S) for commercial sugar cane production. However, sugar cultivation has since ceased. A portion of the larger parcel was used by the State Department of Agriculture for livestock quarantine and staging.

Most Appropriate Use: Based on its agricultural zoning and soil ratings, a potential use for the Proposed Project site is commercial agriculture. However, there has been a decline in production agricultural acreage through the years. The announcement by HC&S to cease operations at the end of 2016 is an example of this trend and provides strong evidence of the challenges commercialized agriculture has in remaining financially feasible.

The subject parcel has easy access to all urban areas on the island. It is located between Central Maui and South Maui, yet still is easily accessible to the West Maui and the Upcountry regions. In addition to the support for light industrial use established in the following Market Study section, evidence of the appropriateness of the Proposed Project is found in the Maui Island Plan (MIP). The Pulehunui area is recognized by the MIP and has been included in its Urban Growth Boundary.

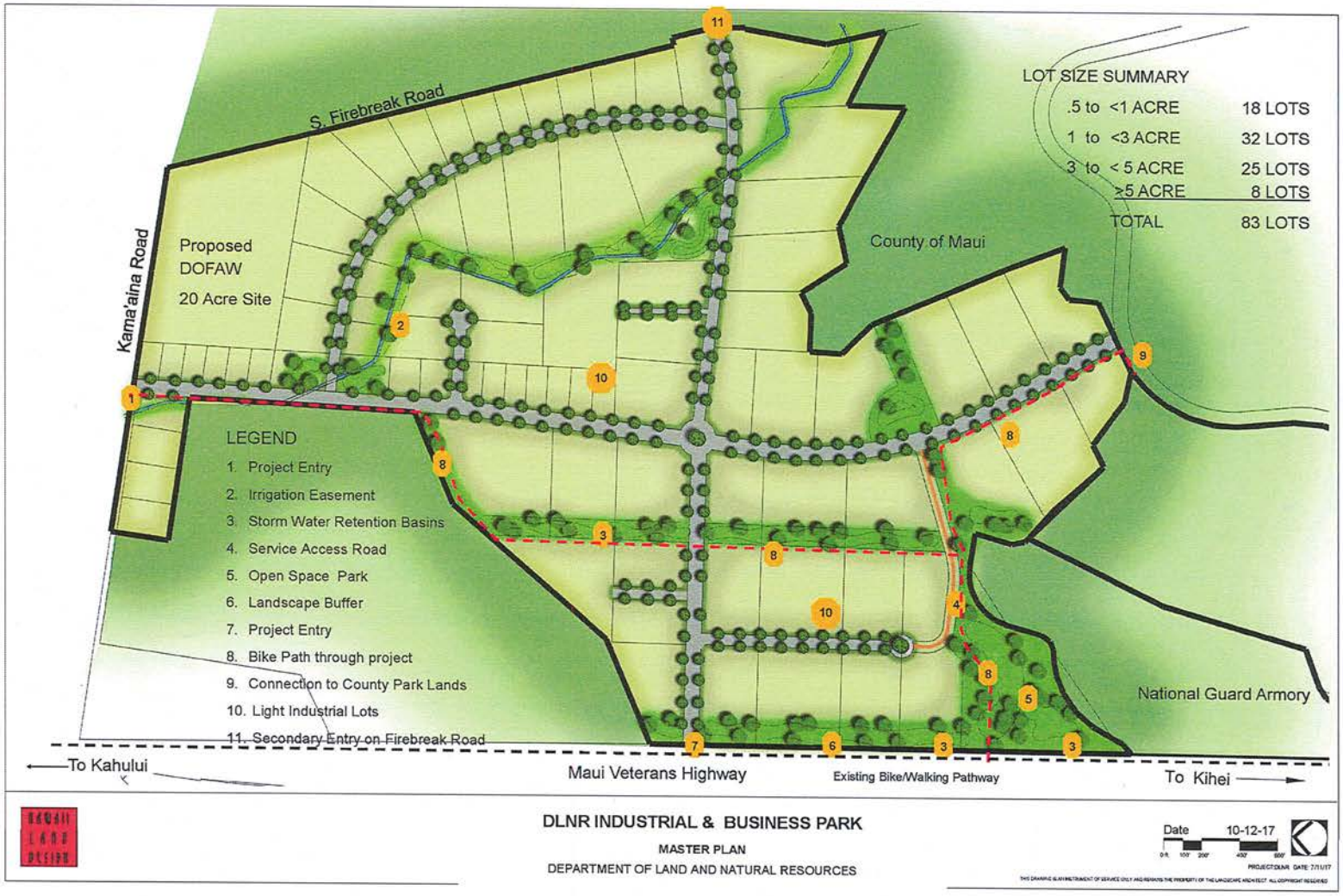
Description of the Proposed Project

Land & Improvements: The Proposed Project is envisioned as a light industrial subdivision to be developed on approximately 280 acres east of Maui Veterans Highway, District of Wailuku, Island and County of Maui. As shown on the State of Hawaii Tax Maps, the subject parcel is within the District of Wailuku, Island and County of Maui. As of the effective date, the subject site is designated for agricultural uses by State Land Use law, County of Maui zoning and the Kihei-Makena Community Plan. The subject parcel also lies within the proposed Urban Growth Boundary set forth by the Maui Island Plan.

The light industrial zoning district provides for a minimum lot size of 7,500 square feet. The current version of land use is to provide approximately 83 leasable lots, consisting of 18 lots between 0.5 acres to less than 1 acre; 32 lots of between 1 acre and less than 3 acres; 25 lots of 3 to less than 5 acres; and 8 lots of 5 acres or larger. The Proposed Project will feature interior roads, bicycle paths, open space areas and drainage networks. A 20-acre baseyard for the State of Hawaii Division of Forestry and Wildlife will also be located within the subdivision.

Likely Tenants: In light of its unique location, away from the central business districts, Kahului Harbor and Kahului Airport, the proposed subdivision is expected to attract many industrial users. These types of users have been displaced from the central areas of Kahului and Wailuku, since Maui's "stacked" zoning allows higher-order business use on industrial land. In addition to industrial and warehouse users, those seeking secured baseyards are likely tenants. Commercial uses, such as retail businesses, professional offices and service companies are considered secondary potential tenants for the Proposed Project, primarily for the lots with Maui Veterans Highway frontage.

It is noted that Maui's first M-3 Restricted Industrial District project has numerous lots under contract for its 86 acres to the southeast of the Proposed Project. This subdivision is limited to heavy industrial uses, which have the potential for odor, dust, smoke, gas, noise, vibration, etc. Given its proximity, tenants for the Proposed Project can possibly provide light industrial supportive services to this heavy industrial subdivision.



Source: Munekiyo Hiraga.
Not to Scale...For Illustrative Purposes Only!

PROJECT SITE MAP

PART III – ANALYSIS AND CONCLUSION

A. MARKET STUDY

The Proposed Project will encompass approximately 280 gross acres in Puunene. Most of the acreage will consist of light industrial zoned land for lease, in addition to a State of Hawaii Division of Forestry and Wildlife baseyard and interior roadways. M-1 Light Industrial District zoning is designed to contain mostly warehousing and distribution types of activity, and permits most compounding, assembly, or treatment of articles or materials with the exception of heavy manufacturing and processing of raw materials. Residential uses are excluded except for dwelling units located above or below the first floor and apartments.

Puunene is situated between Kahului and Kihei. The subject's primary market area is Central Maui, with Kihei being a secondary market. West Maui is the remaining market area for light industrial use, as Upcountry Maui has limited demand. The Proposed Project's market area is rated against West Maui. The rating system considers quality of linkages, ease of access, reputation, visibility, and the availability of support facilities. Focuses include: a) the time that workers and management spend commuting to the buildings in the market; b) proximity to mass transit systems, to airports, and to clients or associated facilities such as commercial and visitor accommodations, traffic conditions, nuisances in the area; and c) the size of the market area, which strongly affects its drawing power. Based on these considerations, the Proposed Project's Central Maui and Kihei markets are considered superior to the West Maui market.

The Proposed Project will be part of the Central Maui and Kihei markets. Its accessibility relative to these markets is rated good. Future growth areas are outside the existing urban core and the lack of supply for true light industrial users necessitates the migration. As previously discussed, existing industrial parks in Kahului and Wailuku are fully-mature and have little vacant land remaining for development or expansion. Ongoing projects, such as Maui Business Park II and Maui Lani Village Center are catering toward industrial retail businesses. Price points for these subdivisions are not conducive to actual light industrial use.

Kahului Airport and Kahului Harbor remain within easy driving distance of the Proposed Project. There is also significantly less traffic and congestion in Puunene, unlike Kahului Industrial Park and Wailuku Industrial Park. It is not uncommon to see commercial vehicles temporarily obstructing the interior roadways of these subdivisions because of a lack of sufficient on-site circulation area.

As Central Maui development growth shifts to the infill areas between Wailuku and Kahului, in the direction of the existing master-plan developments and the future Waiale project district, the industrial areas slated for Waikapu and Puunene will become even more relevant. There is minimal industrial development planned for Kihei, as of the effective date. This will only increase the demand for the Proposed Project, being located along the main arterial connecting Kahului and Kihei.

A Year End 2016 Colliers International Maui Market Report discusses a severe continued shortage for the warehouse market. The following points have been excerpted from the report:

- *Tight market conditions persisted as Maui's industrial vacancy fell to 1.41%, its lowest level in four years. Healthy demand for warehouse space generated nearly 58,000 square feet of new occupancy for 2016. The Kahului and South Maui markets posted the largest gains in net absorption for the year with 49,697 square feet and 15,589 square feet, respectively.*

- *The recent surge in construction activity helped to boost contracting sales for fiscal year-end 2016 to $788.18 million, a healthy 12.5% jump in activity over fiscal year-end 2015 levels. The construction sector is a primary driver of Maui's economy and is instrumental in boosting warehouse demand.*

- *Wholesalers constitute the largest segment of users of Maui's industrial space with a heavy concentration located in Kahului near the harbor.*

- *While the average asking rent has remained between $1.19 and $1.24 psf/mo for the past four years, the severe shortage of warehouse spaces, coupled with strong tenant demand, will likely push rents upward by 5% to 7% over the next year.*

- *While speculative construction has started on a few projects, developers are finding that current land prices and rising construction costs make the financial feasibility of a new warehouse project difficult. For tenants with available capital that are unable to find a suitable space to lease for their businesses, build-to-suit opportunities will likely be more seriously considered if current market conditions persist.*

The Colliers report substantiates the opinions of Maui commercial brokers, who agree that additional options for true light industrial users are needed immediately. Much of Central Maui's existing light industrial vacant land is being purchased and developed for

commercial use. Maui Business Park II (MBP II) is a notable example. To-date, buyers in MBP II include Costco (warehouse expansion and fuel center), County of Maui (new service center), American Savings Bank, BMW of Maui, Servco Pacific (Lexus/Subaru dealership), Pacific Pipe Company (industrial retailer), Kihei Auto Sales, Lowe's, and Huber Pools. Sale prices for most of the lots purchased by these commercial users have been in the $40 to $60 per square foot range. These unit prices are not financially feasible for true industrial users. However, the buyers in MBP II are willing to pay for proximity to the urban core and surrounding business uses, in addition to some lots having vehicular exposure along a heavily-utilized commuter roadway: Hookele Street.

While M-1 Light Industrial District zoning allows commercial use, location and visibility are primary market factors that establish the highest and best use of light industrial land. A prime example is Dairy Road in Kahului. Initially, this roadway experienced limited commuter traffic. During that time, common users were warehouse facilities and construction companies with baseyards. When Dairy Road was expanded, becoming the primary exit thoroughfare for Kahului Airport, the highest and best use for street-lining properties shifted from light industrial to retail. More recently, the development of a new airport access road has lessened vehicular traffic on Dairy Road. The impacts of this change in traffic patterns are already evident, as numerous businesses along Dairy Road have closed, moved or are slated to move. Some of the closures, specifically Dairy Road Shell, Savers, Sports Authority and Kmart, cannot be fully-attributed to diminished traffic as these local businesses and national corporations were already in financial distress. Furthermore, the completed or anticipated moves by Lowe's and Servco Lexus are to larger facilities on Hookele Street. In February 2017, A&B Properties announced plans to develop Hookele Shopping Center. Located at the southeastern corner of Hookele Street and Hana Highway intersection, the proposed 94,000 retail center will be anchored by a Safeway grocery store and fuel station. The new and upcoming commercial projects provide circumstantial evidence of positive long-range economic growth for MBP II.

Even with the aforementioned sales in MBP II, it is recognized that there is still significant unsold inventory in the project. However, the commercial and industrial retail buyers in MBP II are a good representation of the subdivision's target audience. They are considered a different submarket from the subject project's anticipated true light industrial users. Thus, vacant land inventory in Maui Business Park II is deemed non-competitive with the subject, despite their similar M-1 Light Industrial District zoning. Existing improved commercial properties with underlying M-1 Light Industrial District zoning, such as Maui Marketplace, are also

geared toward different users. As previously discussed, this is due to disparate highest and best use, as of the effective date.

It is anticipated that significant demand for the subject lots will come from existing true light industrial users that have outgrown their current locations. Wailuku Industrial Park and Kahului Industrial Park are prime examples of subdivisions with overcrowded conditions and challenging circulation areas for light industrial vehicles. The neighboring Central Maui Baseyard has limited water and wastewater disposal services, making the proposed project's full utility provision an attractive alternative to the current leasehold tenants. Other opportunities include start-up light industrial businesses, who may find leasehold tenure more economically feasible. The need for increased light industrial services is fueled by expected population growth.

FORECASTING DEMAND

The Proposed Project will be an M-1 Light Industrial District development. Suitable tenants include warehousing and distribution types of activity, as well as those that involve compounding, assembly, or treatment of articles or materials with the exception of heavy manufacturing and processing of raw materials. Industrial market growth is tied to the increase in jobs.

As such, industrial-based employment for the entire County of Maui (Maui County) is considered when making the demand forecast. It is noted that Maui County is the only geographic level with employment forecasts. Thus, a forecast for just the subject's Central Maui and Kihei markets is not made because current and future employment data are not available.

According to US Census statistics, population in Maui County has grown almost 21 percent between 2000 and 2010. Statistics by the U.S. Bureau of Economic Analysis and State of Hawaii Department of Business, Economic Development and Tourism show employment in Maui County has increased by over 13 percent during the same period. Civic and private sources are forecasting population and employment increases for Maui County. This infers that demand for light industrial acreage will continue to increase.

Within Maui County, there are approximately 700 acres of entitled land in organized industrial developments, of which, only about 378 acres is utilized, or anticipated to be available, by true light industrial users. Ultimately, the 378-acre light industrial estimate for Maui County may be even less, as Maui Business Park II and Maui Lani Village Center are presumed to sell out with 40 percent light industrial ratios. However, Maui Business Park I, which has similar locational attributes as these ongoing developments, only has a light industrial ratio of about 20 percent.

The quasi-retail demand witnessed in these subdivisions is not anticipated for the subject, due to locational differences. However, given the stacked nature of the M-1 Light Industrial District zoning, it is anticipated that some associated commercial businesses will also be attracted to the Proposed Project. More typical light industrial parks have an industrial use to associated commercial use ratio of 70 to 30 percent. Application of a 70 percent ratio infers a total existing competitive Maui County supply of 540 acres.

Competitive Acreage, Existing and Light Industrial Projects Survey, Maui County

Project Name	Location	Lot/Parcel Area In Acres	Light Industrial In Acres
EXISTING (Central Maui)			
Central Maui Baseyard [1]	Puunene	52	47
Consolidated Baseyard Subdivision	Waikapu	22	22
Kamehameha Parkway Subdivision No. 2	Kahului	16	6
Maui Business Park, Phase 1A & 1-B	Kahului	71	14
Maui Industrial Park, Hana Highway and Dairy Road Industrial Subdivisions	Kahului	145	103
The Millyard Subdivision	Wailuku	28	14
Waiko Baseyard Subdivision	Waikapu	13	12
Wailuku Industrial Park	Wailuku	53	40
Wakea Industrial Subdivision	Kahului	8	5
	Total	408	263
ONGOING (Central Maui)			
Maui Business Park, Phase II [2]	Kahului	141	56
Maui Lani Village Center [2]	Wailuku	50	20
	Total	191	76
EXISTING (South Maui)			
Kihei Commercial Center	Kihei	16	11
Piilani Business Park	Kihei	7	2
	Total	23	13
EXISTING (West Maui)			
Wili Ko Industrial Subdivision	Lahaina	37	4
Lahaina Business Park (Phases I and II)	Lahaina	41	22
	Total	78	26
TOTAL EXISTING LIGHT INDUSTRIAL (Maui County)			378
RATIO LIGHT INDUSTRIAL TO TOTAL ASSOCIATED			70%
TOTAL EXISTING COMPETITIVE (Maui County)			540

Source: ACM Consultants, Inc.

[1] Presumes ~10% of gross acreage for overall project interior roadways

[2] Light Industrial/Mixed-Use Acreage in Maui Business Park and Maui Lani Village Center forecasted at 40%, based on other industrial projects with commuter roadway exposure

Fundamental Analysis – Segmentation Method

Employment forecasts are obtained from three sources: the State of Hawaii Department of Business, Economic Development and Tourism, Hawaii Workforce Informer, and The Nielsen Company. All three indicate employment growth for Maui County through 2030. Straight line annual increases range from approximately 850 to 1,680 employees.

Maui County Employment Forecast

Forecast Source	Estimated 2016	Forecasted 2020	Avg. Increase/ Year (2016-2020)	Forecasted 2030	Avg. Increase/ Year (2020-2030)
DBEDT (2010, 2020, 2030)	104,300	110,900	1,650	127,700	1,680
HIWI (2012 to 2022)	79,746	83,142	849	91,632	849
The Nielsen Company (2016)	88,930	93,109	1,045	103,556	1,045
Concluded Employment Forecast	90,000	95,000		108,000	

DBEDT estimate, HIWI forecast and The Nielsen Company forecast presume straightline annual employment increase

Employment statistics indicated by The Nielsen Company, 2016 Business- Facts Summary are reviewed. All potential industrial industries are considered. The associated employment from the selected industries is 23 percent.

Percentage of Potential Industry Employment, Maui County

Industry	Selected as Proxy for Light Industrial Employment
Utilities	0.7%
Construction	5.4%
Manufacturing	1.4%
Wholesale Trade	4.2%
Building material & garden equipment & supplies	1.1%
Transportation & Warehousing	3.3%
Waste Management	0.2%
Retail Trade (Associated Commercial)	3.0%
Other (R&M, Personal, Laundry)	3.2%
Potential Light Industrial Employment	23%

Source: The Nielsen Company, 2016 Business-Facts Summary/ACM Consultants, Inc.

A November 2015 Employment Density Guide by Homes & Communities Agency and Bilfinger GVA (UK) and May 2008 study by U.S. Green Building Council and Institute of Transportation Engineers presented the net rentable building area needs for various industrial users. The average space needed has trended from 541 to 587 square feet per employee. In light of this increased spatial need, a building demand of 600 square feet per employee is concluded.

Survey of Industrial Net Rentable Building Area Needs

Sub-Category	Density sf (sqm) 2015	Density sf (sqm) 2010
Light Industrial	506 (47)	506 (47)
Industrial & Manufacturing	388 (36)	388 (36)
Storage Distribution (Sub-Sector avg)	868 (80.7)	807 (75)
Average Space Needs	**587**	**567**

Employment Density Guide 2015, Homes & Communities Agency and Bilfinger GVA, UK November 2015

Land-Use	Land-Use Code	sf/Employee 2008
Truck Terminal	30	427
General Light Industrial	110	463
Industrial Park	130	500
Manufacturing	140	535
Warehousing	150	781
Average Space Needs		**541**

US Green Building Council and Institute of Transportation Engineers May 2008

The 600 square feet per employee result is utilized for the net rentable building area needs and multiplied with the corresponding employment estimate. A survey of floor area ratios for Maui associated properties indicates the predominant market range is from 30 to 50 percent. For this analysis a 40 percent midpoint is applied. Gross estimates of associated land square footage supportable demand are converted to 713 acres for 2016, 752 acres by 2020 and 855 acres by 2030.

Maui County Associated Acreage Demand Forecast by Segmentation Method

Line No.		2016	2020	2030
	Maui County (County) Residual Demand			
1	Total County employment	90,000	95,000	108,000
2	Percentage occupying associated space	23%	23%	23%
3	Total County employed in associated industries	20,700	21,850	24,840
4	Average square feet per employee	600	600	600
5	Total County associated building demand in square feet	12,420,000	13,110,000	14,904,000
6	Market associated building Floor-Area-Ratio	40%	40%	40%
7	Total County associated land supportable demand in square feet	31,050,000	32,775,000	37,260,000
8	Total County associated land supportable demand in acres	713	752	855

The results for both the inferred and fundamental analysis methods show demand will continue to increase for light industrial and associated commercial acreage within Maui County through 2030. The demand acreage for the segmentation method is forecasted to increase by 5.5 percent through 2020 and 20 percent through 2030, or annual averages of 1.4 percent.

By comparison, the State of Hawaii Department of Business Economic Development and Tourism reported that employment in 2000 for Maui County was 83,212 and 94,400 employees for 2010. This calculates to an increase of 13.4 percent, averaged at 1.3 percent annually.

Demand Reconciliation

Method		Conclusion
Trend (inferred) methods		
	Growth trends:	Positive
	Historical absorption:	Improving
Fundamental methods		
	Segmentation:	752 acres by 2020; 855 acres by 2030

MEASURING COMPETITIVE SUPPLY

The total supply within organized industrial projects in Maui County is approximately 700 acres. Existing utilization and anticipated ongoing supply of light industrial and associated commercial land is 540 acres. In analyzing future supply, a sensitivity test for residual demand without considering new construction is first conducted. As there is already insufficient supply, the forecast indicates additional light industrial land is needed immediately.

Maui County Light Industrial Acreage Construction Analysis of Residual Demand Forecasts

Line No.		2016	2020	2030
	Maui County (County) Residual Demand			
8	Total County associated land supportable demand in acres	713	752	855
9	Less current County associated land competitive acres	540	540	540
10	Less estimated County new associated construction in acres*	0	0	0
11	Total County associated land residual demand - net (excess) shortage in acres	173	212	315
	County Average associated land market penetration	132%	139%	158%

*Left blank for analytical purposes to determine market impact assuming no new construction

There are two light industrial projects slated for development in Maui County within the next two years. Waiko Industrial Park and Waikapu Light Industrial subdivision will add 33 salable acres to the Central Maui market.

The Proposed Project is anticipated to become available in more than 5 years. The most recent version of the State of Hawaii Department of Hawaiian Home Land (DHHL) Pulehunui Draft EIS identifies a wide variety of land uses, with commercial/light industrial use of up to 135 acres at Pulehunui North and approximately 115 acres at Pulehunui South. It is important to recognize that the DHHL potential Commercial/Industrial Uses described in their draft report are "retail, agribusiness processing, packaging and/or marketing of agricultural goods, comprehensive commercial or retail complex and/or a visitor attraction destination, cultural center, business hotel or other large visitor industry-based use". Most of these potential users would not be the target market for the subject project. For the purpose of this analysis, 135 acres from Pulehunui North and 31 acres (identified as Industrial) at Pulehunui South have been considered for this market study. This represents over 66 percent of the 250 acres of commercial/industrial lands identified by the DHHL project draft EIS. As previously discussed, light industrial and mixed-use projects with commuter roadway frontage have shown a pro-rata share of industrial use of 40 percent. Therefore, inclusion of 66 percent for the DHHL project is more than reasonable. DHHL has the exclusive authority to control its lands; therefore, the proposed project is not required to obtain a State Land Use District Boundary Amendment or change in county zoning. These factors make for an easier decision to not proceed if market conditions become unfavorable. A June 2016 Summary Report by planning consultant PBR Hawaii &

Associates, Inc. indicates the planning effort is still anticipated to run for five years or longer. At that point in time, the bulk parcels "could be to put out to bid to qualified real estate developers and subsequently developed by a successful bidder. DHHL's request for proposals (RFP) process typically takes between four and seven months (from RFP issuance to contract certification)." Thus, there is still some uncertainty for this development. Probability of starting for this project is estimated at 90 percent and delivery forecasted at longer than 5 years.

It is forecasted that delivery of the 16-acre light industrial park for A&B's Waiale Master Plan project will be over five years, as the initial focus will likely be the residential component. Probability of starting for Waiale's light industrial area is estimated at 90 percent.

Piilani Promenade is planned for 75 acres of light industrial zoned land in Kihei. As of the effective date, the development is slated for only 58,000 square feet of light industrial space, with the remaining uses being retail and residential. Presuming a market-based 40 percent floor-area-ratio, the supportive acreage for the light industrial component is approximately 3 acres. This project has come under heavy public scrutiny and the likelihood of this project moving forward is concluded to be 50 percent.

Maui County Ongoing and Future Light Industrial Construction

Project	Location	Planned Acres	Probability of Start	Probability Area Acres	Probable Delivery Date
Waiko Industrial Park	Waikapu	25	100%	25	Within 2 Years
Waikapu Light Industrial	Waikapu	8	100%	8	Within 2 Years
	Total Short-Term	33		33	
					5 Years or Less
	Total Intermediate	0		0	
DLNR Business Park (SUBJECT)	Puunene	227	100%	227	Over 5 Years
DHHL Pulehunui (Industrial/Ag. Processing/Commerial)	Puunene	166	90%	149	Over 5 Years
Waiale Master Plan	Kahului	16	90%	14	Over 5 Years
Piilani Promenade (based on 58,000sf GBA at 40% FAR)	Kihei	3	50%	2	Over 5 Years
	Total Longer-Term	412		392	
	Total County	**445**		**425**	

Current supply levels for existing light industrial projects in Maui County are segregated by market areas (See Page 37). Due to inventory shortages, new construction is warranted immediately. This is also supported by the existing trend of growth expanding from the markets' current urban areas.

The residual demand study of light industrial and associated commercial acreage shows that overall Maui County is greatly

undersupplied. Short-term and intermediate construction will not keep up with the growth in demand to 2030. The forecast indicates overall average market penetration is will reach almost 150 percent before additional supply is provided. The overall market undersupply will be reduced with the development of the Proposed Project and other longer-term future projects.

Maui County Light Industrial Acreage Residual Demand Forecast

Line No.		2016	2020	2030
	Maui County (County) Residual Demand			
8	Total County associated land supportable demand in acres	713	752	855
9	Less current County associated land competitive acres	540	573	573
10	Less estimated County new associated construction in acres	33	0	392
11	Total County associated land residual demand - net (excess) shortage in acres	140	179	(110)
	County Average Associated land market penetration	132%	131%	149%

The current share of light industrial and associated commercial acreage for the Central Maui and Kihei markets is 93 percent. After considering anticipated construction through 2020, the change in market share for Central Maui and Kihei light industrial and associated commercial acreage is forecasted to increase by 0.4 percentage points. The change in Central Maui and Kihei market share from 2020 to 2030 increases by approximately 2.6 percentage points.

Central Maui and Kihei Associated Land Capture Rate by Pro Rata Share

Location	2016	% of Total	2020	% of Total	% Change in Pro Rata Share	Comment	2030	% of Total	% Change in Pro Rata Share	Comment
Central Maui and Kihei Associated acreage	503	93%	536	94%	0.395%	33 acres of anticipated construction	928	96%	2.623%	392 acres of anticipated construction
Current Associated acreage in remaining Submarkets	37	7%	37	6%	-0.395%	No anticipated construction	37	4%	-2.623%	No anticipated construction
Total Associated acreage in County	540	100.0%	573	100.0%			965	100.0%		

With future urban growth shifting toward Waikapu and the future Waiale project district, coupled with the lack of significant planned development in Kihei, it is expected that the Central Maui and Kihei markets capture rate will increase through 2030 and reflected in the residual demand forecasts. Although the demand analysis indicates a surplus of 107 acres by 2030, this is approximately 11 percent of the then competitive supply. Known as equilibrium vacancy, the excess acreage is necessary to facilitate efficient movement by market participants.

Central Maui and Kihei Associated Land Residual Demand Analysis Forecast

Line No.		2016	2020	2030
	Central Maui and Kihei (Submarket) Residual Demand for Associated Land			
12	Total County associated land supportable demand in acres	713	752	855
13	Estimated percentage Submarket capture	93%	94%	96%
14	Total Submarket associated land supportable demand in acres	663	707	821
15	Less current Submarket associated land competitive acres	503	536	536
16	Less estimated Submarket new construction in acres	33	0	392
17	Total Submarket associated land residual demand - net (excess) shortage in acres	127	171	(107)
	Submarket Average Associated land market penetration	132%	132%	153%

Maui County employment will increase, with a forecast of over 1,250 new jobs per year to 2020 and then a further increase of almost 1,300 jobs per year from 2020 to 2030. Based on this expected job growth, it can be inferred that there will be good demand for the Proposed Project.

The Proposed Project will be a light industrial and associated commercial development situated between two strong growth areas, Central Maui and Kihei. The Central Maui and Kihei markets currently have approximately 93 percent of light industrial and associated commercial acreage within organized projects. Ongoing developer inventory is limited to Maui Business Park II and Maui Lani Village Center, where sales have primarily been to professional commercial and industrial retail buyers. Imminent new construction in Waikapu will be insufficient to satisfy the short-term future supply needs for light industrial and associated commercial users. Residual forecasts indicate increasing demand for light industrial and associated commercial acreage within the Proposed Project's markets and support the inferred conclusion of positive growth trends and improving absorption.

Based on the Proposed Project's 227 salable acres and 855 acres of supportable light industrial demand for Maui County by 2030, the capture rate of the Proposed Project upon completion is 26.5 percent. This supports the "actual" capture rate of 28.4 percent, if the Proposed Project acreage is considered with existing and short-term future light industrial acreage inventory [227 ÷ (227 + 540 + 33)].

Subject Capture of Maui County Demand by Capture Rate Forecasts

FORECAST	2016	2020	2030
Total County associated land supportable demand in acres	713	752	855
Current capture rate of Proposed Project	0%	0.0%	26.5%
Indicated land for Proposed Project in acres	0	0	227

The Central Maui and Kihei markets currently capture about 93 percent of the light industrial and associated commercial acreage within Maui County. Ongoing and planned development is

insufficient to meet future demand for the Central Maui and Kihei markets, especially since they represent areas of trending growth. The locational rating for the Central Maui and Kihei markets concludes that they are superior to the West Maui market. The Proposed Project is one of a few longer-term developments planned, with delivery not until 2030. Waiko Industrial Park and Waikapu Light Industrial are slated for 33 net acres and it is anticipated that these two light industrial subdivisions will be absorbed quickly due to the existing undersupply. Thus, it is expected that the Proposed Project will be very competitive within Central Maui and Kihei markets and can retain stabilized occupancy through 2030.

The Proposed Project is slated for 227 acres of net leasable light industrial land, which will represent 27 percent of the 2030 Central Maui and Kihei supportable demand of 821 acres. The Proposed Project is forecasted to be at stabilized occupancy before 2030. For the Proposed Project, stabilized occupancy refers to having obtained ground leases. The individual leasehold owners would subsequently build vertical improvements at a pace financially feasible for their various business operations.

Proposed Project Capture of Central Maui and Kihei Demand by Capture Rate Forecast

Line No.		2016	2020	2030
	Proposed Project Capture			
18	Submarket Associated land demand in acres	663	707	821
19	Proposed Project forecasted capture rate	0%	0%	27%
20	Proposed Project absorption forecast in acres	0	0	222

MARKET STUDY CONCLUSIONS

The reconciliation of the subject capture indicators is shown below. Strong absorption of available and short-term future inventory is anticipated due to the undersupply of light industrial and associated commercial acreage. Ground rents and unit rents, as well as property sale prices will continue to increase during this same period. Upon availability of the Proposed Project near 2025, absorption, rents and prices will still be increasing before stabilizing as the market moves toward balance near 2030. The forecast for the DLNR Industrial and Business Park market study is summarized on the following page.

Market Study Conclusions

FORECAST	
Absorption	Immediately strong due to undersupply of competitive acreage; stabilizing near 2030
Rents/Prices	Increasing, then stabilizing near 2030

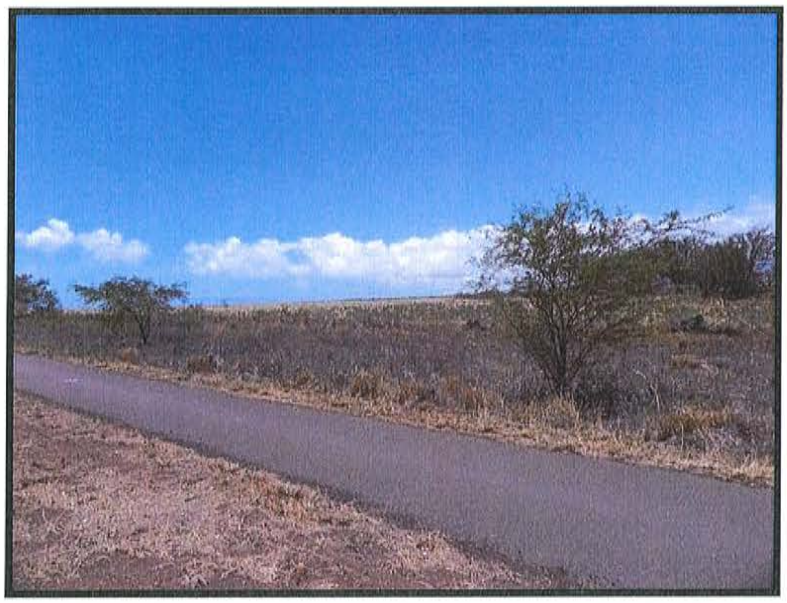
Summary of DLNR Industrial and Business Park Market Study Forecast

Line No.		2016	2020	2030	Comments/Source
	Maui County (County) Residual Demand				
1	Total County employment	90,000	95,000	108,000	Forecast
2	Percentage occupying associated space	23%	23%	23%	Estimate from most probable industries
3	Total County employed in associated industries	20,700	21,850	24,840	Line 1 x Line 2
4	Average square feet per employee	600	600	600	Forecast
5	Total County associated building demand in square feet	12,420,000	13,110,000	14,904,000	Line 3 x Line 4
6	Market associated building Floor-Area-Ratio	40%	40%	40%	Market Survey
7	Total County associated land supportable demand in square feet	31,050,000	32,775,000	37,260,000	Line 5 ÷ Line 6
8	Total County associated land supportable demand in acres	713	752	855	Line 7 ÷ 43,560 square feet
9	Less current County associated land competitive acres	540	573	573	Actual Survey
10	Less estimated County new associated construction in acres	33	0	370	Estimated probability
11	Total County associated land residual demand - net (excess) shortage in acres	140	179	(88)	Line 8 - Line 9 - Line 10
	County Average Associated land market penetration	132%	131%	149%	Demand/Total Supply
	Central Maui and Kihei (Submarket) Residual Demand for Associated Land				
12	Total County associated land supportable demand in acres	713	752	855	Taken from Line 8
13	Estimated percentage Submarket capture	93%	94%	96%	Increases due to lack of West Maui projects
14	Total Submarket associated land supportable demand in acres	663	707	821	Line 12 x Line 13
15	Less current Submarket associated land competitive acres	503	536	536	Actual survey
16	Less estimated Submarket new construction in acres	33	0	392	Estimated probability
17	Total Submarket associated land residual demand - net (excess) shortage in acres	127	171	(107)	Line 14 - Line 15 - Line 16
	Submarket Average Associated land market penetration	132%	132%	153%	Demand/Total Supply
	Proposed Project Capture				
18	Submarket Associated land demand in acres	663	707	821	Based on Submarket capture rate increasing
19	Proposed Project forecasted capture rate	0%	0%	27%	Anticipated Capture
20	Proposed Project absorption forecast in acres	**0**	**0**	**222**	**Concluded Forecast**

EXHIBITS

EXHIBIT A

Photographs of the Subject Site



Photograph No. 1

View of westerly portion of the Proposed Project site with Maui Veterans Highway frontage. A dedicated bicycle and pedestrian path that runs parallel to the highway is visible in the foreground. The camera is facing northeasterly.



Photograph No. 2

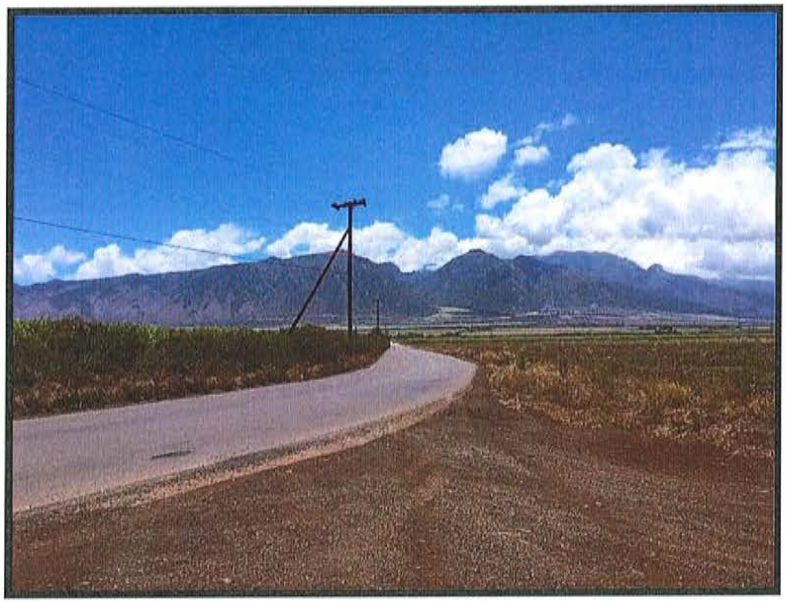
View of northeasterly portion of the Proposed Project site with South Firebreak Road visible in the foreground. The camera is facing westerly.

PHOTOGRAPHS OF THE SUBJECT



Photograph No. 3

View of easterly portion of the Proposed Project with South Firebreak Road visible. The camera is facing northerly.



Photograph No. 4

View of northeastern side of Proposed Project site at the corner of Kamaaina Road and South Firebreak Road. The camera is facing westerly toward Maui Veterans Highway.

PHOTOGRAPHS OF THE SUBJECT



Photograph No. 5

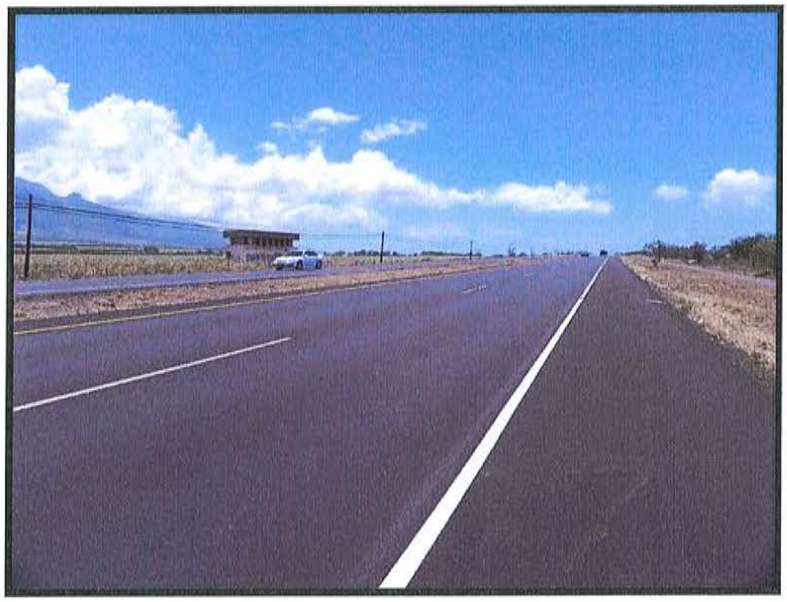
View of Kamaaina Road. The camera is facing easterly.



Photograph No. 6

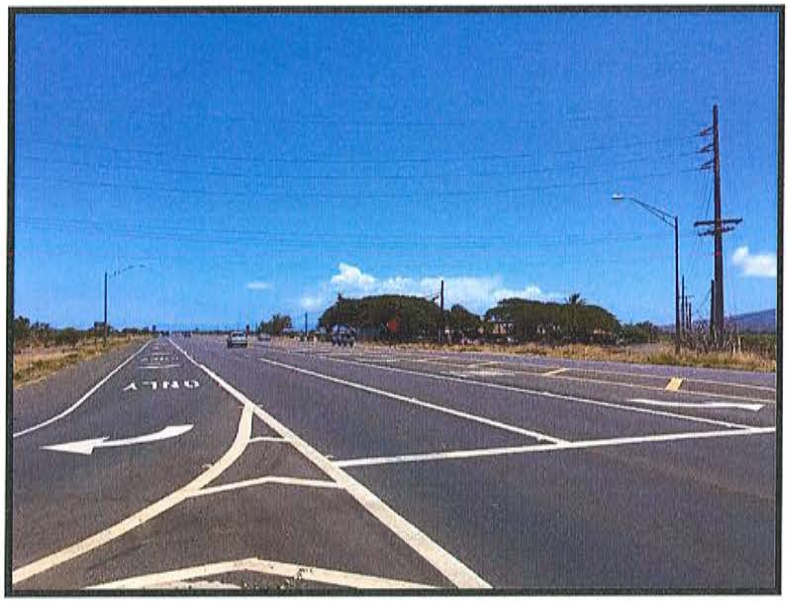
View of Kamaaina Road at its signalized intersection with Maui Veterans Highway and Mehameha Loop. The camera is facing westerly.

PHOTOGRAPHS OF THE SUBJECT



Photograph No. 7

View of Maui Veterans Highway with western portion of Proposed Project site at right where direct highway access is planned. The camera is facing northerly.



Photograph No. 8

View of Maui Veterans Highway with the dedicated turn lane to Kamaaina Road visible at left. The Maui Humane Society complex is in the background, across the highway. The camera is facing southerly.

PHOTOGRAPHS OF THE SUBJECT

EXHIBIT B

Demographic Data

The Nielsen Company

MAUI COUNTY

Prepared For ACM Consultants - 7725981

Description	Maui County, HI (15009)	
	Total	%
Pop-Facts Summary		
Population		
2021 Projection	175,992	
2016 Estimate	166,228	
2010 Census	154,834	
2000 Census	128,094	
Growth 2016 - 2021		5.87%
Growth 2010 - 2016		7.36%
Growth 2000 - 2010		20.88%
Households		
2021 Projection	62,562	
2016 Estimate	58,641	
2010 Census	53,886	
2000 Census	43,510	
Growth 2016 - 2021		6.69%
Growth 2010 - 2016		8.82%
Growth 2000 - 2010		23.85%
Family Households		
2021 Projection	41,061	
2016 Estimate	38,548	
2010 Census	35,498	
2000 Census	29,902	
Growth 2016 - 2021		6.52%
Growth 2010 - 2016		8.59%
Growth 2000 - 2010		18.71%

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Prepared For ACM Consultants - 7725981

Description	Maui County, HI (15009)	
	Total	%
Pop-Facts Demographic Snapshot		
2016 Est. Population by Single-Classification Race	**166,228**	
White Alone	56,586	34.04%
Black or African American Alone	1,519	0.91%
Amer. Indian and Alaska Native Alone	841	0.51%
Asian Alone	46,480	27.96%
Native Hawaiian and Other Pac. Isl. Alone	16,952	10.20%
Some Other Race Alone	3,575	2.15%
Two or More Races	40,275	24.23%
2016 Est. Population by Hispanic or Latino Origin	**166,228**	
Not Hispanic or Latino	147,668	88.83%
Hispanic or Latino	18,560	11.17%
Mexican	7,315	39.41%
Puerto Rican	6,058	32.64%
Cuban	195	1.05%
All Other Hispanic or Latino	4,992	26.90%
2016 Est. Hisp. or Latino Pop by Single-Class. Race	**18,560**	
White Alone	4,895	26.37%
Black or African American Alone	62	0.33%
American Indian and Alaska Native Alone	263	1.42%
Asian Alone	1,430	7.70%
Native Hawaiian and Other Pacific Islander Alone	938	5.05%
Some Other Race Alone	3,314	17.86%
Two or More Races	7,658	41.26%
2016 Est. Pop by Race, Asian Alone, by Category	**46,480**	
Chinese, except Taiwanese	1,757	3.78%
Filipino	26,615	57.26%
Japanese	12,957	27.88%
Asian Indian	115	0.25%
Korean	920	1.98%
Vietnamese	545	1.17%
Cambodian	44	0.09%

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Description	Maui County, HI (15009)	
	Total	%
Hmong	0	0.00%
Laotian	30	0.06%
Thai	185	0.40%
All Other Asian Races Including 2+ Category	3,312	7.13%
2016 Est. Population by Ancestry	**166,228**	
Arab	488	0.29%
Czech	566	0.34%
Danish	500	0.30%
Dutch	649	0.39%
English	5,319	3.20%
French (except Basque)	2,288	1.38%
French Canadian	272	0.16%
German	8,083	4.86%
Greek	227	0.14%
Hungarian	756	0.45%
Irish	5,455	3.28%
Italian	2,762	1.66%
Lithuanian	213	0.13%
United States or American	1,894	1.14%
Norwegian	809	0.49%
Polish	1,134	0.68%
Portuguese	5,665	3.41%
Russian	630	0.38%
Scottish	1,358	0.82%
Scotch-Irish	708	0.43%
Slovak	53	0.03%
Subsaharan African	24	0.01%
Swedish	1,088	0.65%
Swiss	567	0.34%
Ukrainian	15	0.01%
Welsh	535	0.32%
West Indian (except Hisp. groups)	95	0.06%
Other ancestries	108,163	65.07%
Ancestry Unclassified	15,912	9.57%
2016 Est. Pop Age 5+ by Language Spoken At Home	**156,025**	

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Description	Maui County, HI (15009)	
	Total	%
Speak Only English at Home	123,998	79.47%
Speak Asian/Pac. Isl. Lang. at Home	26,640	17.07%
Speak IndoEuropean Language at Home	2,368	1.52%
Speak Spanish at Home	2,451	1.57%
Speak Other Language at Home	568	0.36%

2016 Est. Population by Sex	**166,228**	
Male	83,658	50.33%
Female	82,570	49.67%

2016 Est. Population by Age	**166,228**	
Age 0 - 4	10,203	6.14%
Age 5 - 9	10,390	6.25%
Age 10 - 14	10,380	6.24%
Age 15 - 17	6,174	3.71%
Age 18 - 20	5,611	3.38%
Age 21 - 24	7,529	4.53%
Age 25 - 34	20,794	12.51%
Age 35 - 44	21,816	13.12%
Age 45 - 54	22,933	13.80%
Age 55 - 64	23,773	14.30%
Age 65 - 74	16,496	9.92%
Age 75 - 84	6,969	4.19%
Age 85 and over	3,160	1.90%
Age 16 and over	133,228	80.15%
Age 18 and over	129,081	77.65%
Age 21 and over	123,470	74.28%
Age 65 and over	26,625	16.02%
2016 Est. Median Age	**40.5**	
2016 Est. Average Age	**40.1**	

2016 Est. Male Population by Age	**83,658**	
Age 0 - 4	5,265	6.29%
Age 5 - 9	5,394	6.45%
Age 10 - 14	5,319	6.36%
Age 15 - 17	3,130	3.74%
Age 18 - 20	2,905	3.47%
Age 21 - 24	3,916	4.68%

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Description	Maui County, HI (15009)	
	Total	%
Age 25 - 34	10,785	12.89%
Age 35 - 44	11,328	13.54%
Age 45 - 54	11,389	13.61%
Age 55 - 64	11,986	14.33%
Age 65 - 74	7,992	9.55%
Age 75 - 84	3,111	3.72%
Age 85 and over	1,138	1.36%
2016 Est. Median Age, Male	**39.5**	
2016 Est. Average Age, Male	**39.3**	

2016 Est. Female Population by Age	**82,570**	
Age 0 - 4	4,938	5.98%
Age 5 - 9	4,996	6.05%
Age 10 - 14	5,061	6.13%
Age 15 - 17	3,044	3.69%
Age 18 - 20	2,706	3.28%
Age 21 - 24	3,613	4.38%
Age 25 - 34	10,009	12.12%
Age 35 - 44	10,488	12.70%
Age 45 - 54	11,544	13.98%
Age 55 - 64	11,787	14.28%
Age 65 - 74	8,504	10.30%
Age 75 - 84	3,858	4.67%
Age 85 and over	2,022	2.45%
2016 Est. Median Age, Female	**41.6**	
2016 Est. Average Age, Female	**41.0**	

2016 Est. Pop Age 15+ by Marital Status	**135,255**	
Total, Never Married	43,164	31.91%
Males, Never Married	24,299	17.97%
Females, Never Married	18,865	13.95%
Married, Spouse present	60,469	44.71%
Married, Spouse absent	7,882	5.83%
Widowed	6,810	5.03%
Males Widowed	1,196	0.88%
Females Widowed	5,614	4.15%
Divorced	16,930	12.52%
Males Divorced	7,732	5.72%

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Description	Maui County, HI (15009)	
	Total	%
Females Divorced	9,198	6.80%
2016 Est. Pop Age 25+ by Edu. Attainment	**115,941**	
Less than 9th grade	3,891	3.36%
Some High School, no diploma	5,400	4.66%
High School Graduate (or GED)	35,912	30.97%
Some College, no degree	28,014	24.16%
Associate Degree	11,655	10.05%
Bachelor's Degree	20,372	17.57%
Master's Degree	7,179	6.19%
Professional School Degree	2,295	1.98%
Doctorate Degree	1,223	1.05%
2016 Est. Pop Age 25+ by Edu. Attain., Hisp./Lat.	**9,912**	
No High School Diploma	1,608	16.22%
High School Graduate	3,037	30.64%
Some College or Associate's Degree	3,675	37.08%
Bachelor's Degree or Higher	1,592	16.06%
2016 Est. Households by Household Type	**58,641**	
Family Households	38,548	65.74%
Nonfamily Households	20,093	34.26%
2016 Est. Group Quarters Population	**2,780**	
2016 HHs by Ethnicity, Hispanic/Latino	**4,951**	
2016 Est. Households by HH Income	**58,641**	
Income < $15,000	4,816	8.21%
Income $15,000 - $24,999	4,630	7.90%
Income $25,000 - $34,999	5,482	9.35%
Income $35,000 - $49,999	7,148	12.19%
Income $50,000 - $74,999	9,455	16.12%
Income $75,000 - $99,999	8,398	14.32%
Income $100,000 - $124,999	6,200	10.57%
Income $125,000 - $149,999	3,961	6.75%
Income $150,000 - $199,999	4,050	6.91%

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Description	Maui County, HI (15009)	
	Total	%
Income $200,000 - $249,999	1,766	3.01%
Income $250,000 - $499,999	1,949	3.32%
Income $500,000+	786	1.34%
2016 Est. Average Household Income	**$90,729**	
2016 Est. Median Household Income	**$69,155**	

2016 Median HH Inc. by Single-Class. Race or Eth.		
White Alone	$67,728	
Black or African American Alone	$65,525	
American Indian and Alaska Native Alone	$62,748	
Asian Alone	$83,802	
Native Hawaiian and Other Pacific Islander Alone	$47,529	
Some Other Race Alone	$67,352	
Two or More Races	$64,034	
Hispanic or Latino	$56,615	
Not Hispanic or Latino	$70,513	

2016 Est. Family HH Type by Presence of Own Child.	**38,548**	
Married-Couple Family, own children	11,088	28.76%
Married-Couple Family, no own children	16,549	42.93%
Male Householder, own children	1,820	4.72%
Male Householder, no own children	1,942	5.04%
Female Householder, own children	3,705	9.61%
Female Householder, no own children	3,444	8.93%

2016 Est. Households by Household Size	**58,641**	
1-person	14,812	25.26%
2-person	18,406	31.39%
3-person	9,553	16.29%
4-person	7,203	12.28%
5-person	4,015	6.85%
6-person	2,240	3.82%
7-or-more-person	2,412	4.11%
2016 Est. Average Household Size	**2.79**	

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Prepared For ACM Consultants - 7725981

Description	Maui County, HI (15009)	
	Total	%
2016 Est. Households by Presence of People Under 18	**58,641**	
Households with 1 or More People under Age 18:	**20,166**	**34.39%**
Married-Couple Family	12,931	64.12%
Other Family, Male Householder	2,280	11.31%
Other Family, Female Householder	4,698	23.30%
Nonfamily, Male Householder	183	0.91%
Nonfamily, Female Householder	74	0.37%
Households with No People under Age 18:	**38,475**	**65.61%**
Married-Couple Family	14,702	38.21%
Other Family, Male Householder	1,485	3.86%
Other Family, Female Householder	2,452	6.37%
Nonfamily, Male Householder	10,267	26.68%
Nonfamily, Female Householder	9,569	24.87%
2016 Est. Households by Number of Vehicles	**58,641**	
No Vehicles	3,828	6.53%
1 Vehicle	19,448	33.16%
2 Vehicles	23,241	39.63%
3 Vehicles	7,082	12.08%
4 Vehicles	3,168	5.40%
5 or more Vehicles	1,874	3.20%
2016 Est. Average Number of Vehicles	**1.9**	
2016 Est. Families by Poverty Status	**38,548**	
2016 Families at or Above Poverty	36,101	93.65%
2016 Families at or Above Poverty with Children	17,064	44.27%
2016 Families Below Poverty	2,447	6.35%
2016 Families Below Poverty with Children	1,692	4.39%
2016 Est. Pop Age 16+ by Employment Status	**133,228**	
In Armed Forces	192	0.14%
Civilian - Employed	85,320	64.04%
Civilian - Unemployed	6,861	5.15%
Not in Labor Force	40,855	30.67%

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Description	Maui County, HI (15009)	
	Total	%
2016 Est. Civ. Employed Pop 16+ by Class of Worker	**85,237**	
For-Profit Private Workers	54,065	63.43%
Non-Profit Private Workers	5,906	6.93%
Local Government Workers	3,768	4.42%
State Government Workers	8,172	9.59%
Federal Government Workers	1,381	1.62%
Self-Employed Workers	11,758	13.79%
Unpaid Family Workers	187	0.22%

2016 Est. Civ. Employed Pop 16+ by Occupation	**85,237**	
Architect/Engineer	798	0.94%
Arts/Entertainment/Sports	1,933	2.27%
Building Grounds Maintenance	7,206	8.45%
Business/Financial Operations	2,300	2.70%
Community/Social Services	1,208	1.42%
Computer/Mathematical	414	0.49%
Construction/Extraction	5,565	6.53%
Education/Training/Library	5,374	6.30%
Farming/Fishing/Forestry	1,011	1.19%
Food Prep/Serving	8,600	10.09%
Health Practitioner/Technician	3,739	4.39%
Healthcare Support	1,583	1.86%
Maintenance Repair	2,422	2.84%
Legal	816	0.96%
Life/Physical/Social Science	538	0.63%
Management	6,319	7.41%
Office/Admin. Support	10,159	11.92%
Production	3,062	3.59%
Protective Services	2,312	2.71%
Sales/Related	10,378	12.18%
Personal Care/Service	3,440	4.04%
Transportation/Moving	6,060	7.11%

2016 Est. Pop 16+ by Occupation Classification	**85,237**	
Blue Collar	17,109	20.07%
White Collar	43,976	51.59%
Service and Farm	24,152	28.34%

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Description	Maui County, HI (15009)	
	Total	%
2016 Est. Workers Age 16+ by Transp. to Work	**82,552**	
Drove Alone	60,152	72.87%
Car Pooled	10,177	12.33%
Public Transportation	2,144	2.60%
Walked	2,785	3.37%
Bicycle	1,053	1.28%
Other Means	1,858	2.25%
Worked at Home	4,383	5.31%
2016 Est. Workers Age 16+ by Travel Time to Work		
Less than 15 Minutes	29,942	
15 - 29 Minutes	24,662	
30 - 44 Minutes	13,043	
45 - 59 Minutes	5,878	
60 or more Minutes	3,233	
2016 Est. Avg Travel Time to Work in Minutes	**24.00**	
2016 Est. Occupied Housing Units by Tenure	**58,641**	
Owner Occupied	32,717	55.79%
Renter Occupied	25,924	44.21%
2016 Owner Occ. HUs: Avg. Length of Residence	**17.1**	
2016 Renter Occ. HUs: Avg. Length of Residence	**7.8**	
2016 Est. Owner-Occupied Housing Units by Value	**32,717**	
Value Less than $20,000	470	1.44%
Value $20,000 - $39,999	253	0.77%
Value $40,000 - $59,999	134	0.41%
Value $60,000 - $79,999	104	0.32%
Value $80,000 - $99,999	213	0.65%
Value $100,000 - $149,999	681	2.08%
Value $150,000 - $199,999	896	2.74%
Value $200,000 - $299,999	2,188	6.69%

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Description	Maui County, HI (15009)	
	Total	%
Value $300,000 - $399,999	3,929	12.01%
Value $400,000 - $499,999	5,053	15.44%
Value $500,000 - $749,999	9,295	28.41%
Value $750,000 - $999,999	4,545	13.89%
Value $1,000,000 or more	4,956	15.15%
2016 Est. Median All Owner-Occupied Housing Value	**$565,559**	

2016 Est. Housing Units by Units in Structure	**75,437**	
1 Unit Attached	4,427	5.87%
1 Unit Detached	43,383	57.51%
2 Units	3,666	4.86%
3 or 4 Units	3,391	4.50%
5 to 19 Units	9,691	12.85%
20 to 49 Units	4,865	6.45%
50 or More Units	5,895	7.81%
Mobile Home or Trailer	85	0.11%
Boat, RV, Van, etc.	34	0.05%

2016 Est. Housing Units by Year Structure Built	**75,437**	
Housing Units Built 2010 or later	5,658	7.50%
Housing Units Built 2000 to 2009	12,082	16.02%
Housing Units Built 1990 to 1999	12,229	16.21%
Housing Units Built 1980 to 1989	14,605	19.36%
Housing Units Built 1970 to 1979	17,663	23.41%
Housing Units Built 1960 to 1969	5,774	7.65%
Housing Units Built 1950 to 1959	3,688	4.89%
Housing Units Built 1940 to 1949	1,666	2.21%
Housing Unit Built 1939 or Earlier	2,072	2.75%
2016 Est. Median Year Structure Built	**1985**	

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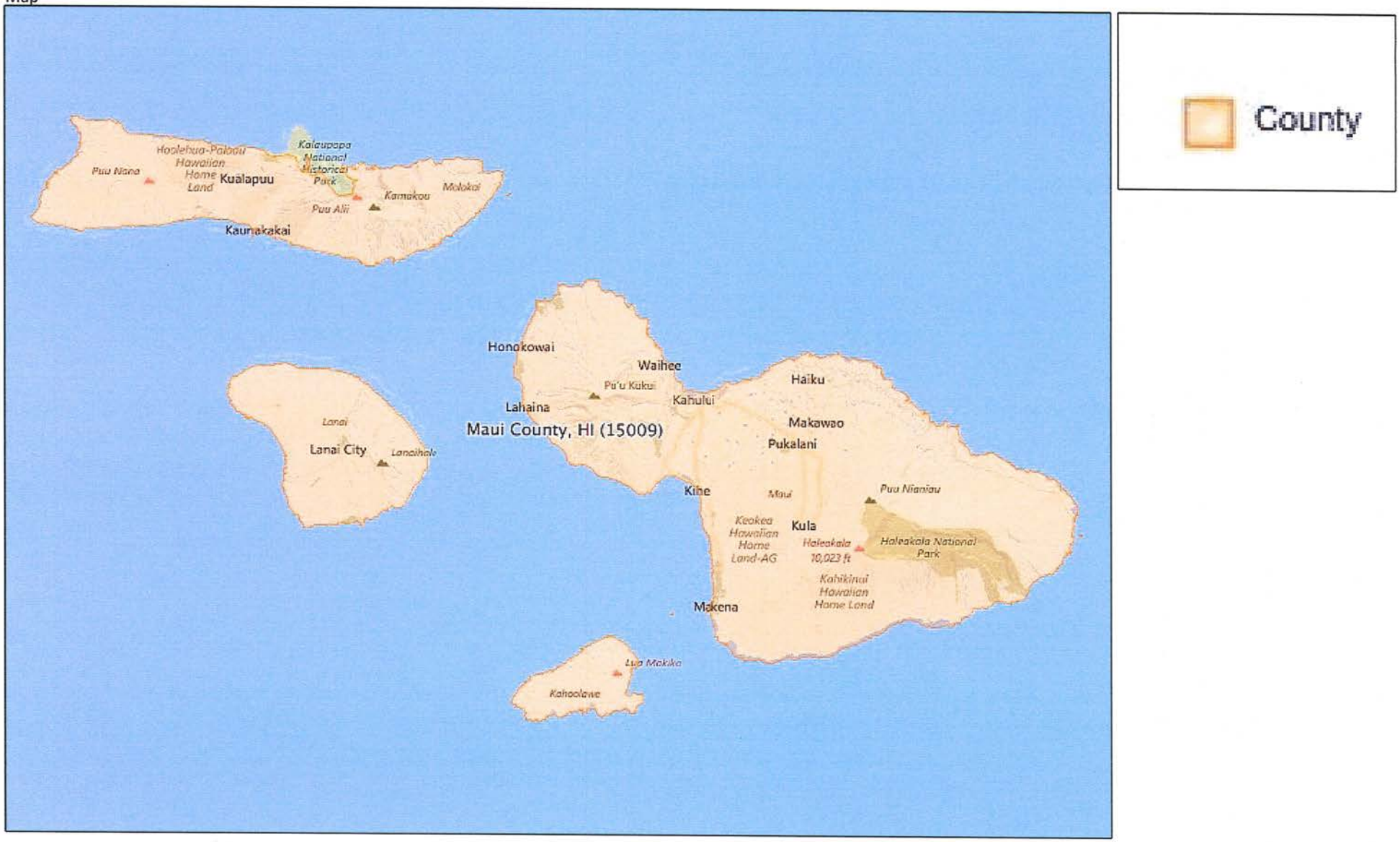
Map



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Maui County, HI (15009)

Description	Total
Workplace Bus & Emp Summary	
Number of Employees	88,930
Employees per Business	10
Residential Population	166,228
Residential Population per Business	18
Number of Households	58,641
Total Employees Working at Home	4,383

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Maui County, HI (15009)

NAICS Code	Description	Total Establishment	Total Employees	Employees Per Establishment
Workplace Business & Employment				
11-81,92	**Total Business**	**9,155**	**88,930**	**10**
11-81	Private Sector	8,909	84,763	10
92	Public Administration	246	4,167	17
11	**Agriculture, Forestry, Fishing and Hunting**	**63**	**580**	**9**
21	**Mining, Quarrying, and Oil and Gas Extraction**	**1**	**3**	**3**
22	**Utilities**	**17**	**564**	**33**
23	**Construction**	**657**	**4,601**	**7**
31-33	**Manufacturing**	**210**	**1,172**	**6**
42	**Wholesale Trade**	**282**	**3,599**	**13**
48-49	**Transportation and Warehousing**	**264**	**2,837**	**11**
51	**Information**	**138**	**1,078**	**8**
53	**Real Estate and Rental and Leasing**	**693**	**6,974**	**10**
54	**Professional, Scientific, and Technical Services**	**834**	**3,405**	**4**
55	**Management of Companies and Enterprises**	**1**	**3**	**3**
56	**Administrative, Support, Waste Mgmt Remediation Services**	**438**	**3,088**	**7**
61	**Educational Services**	**168**	**4,557**	**27**
62	**Healthcare and Social Assistance**	**1,342**	**9,361**	**7**
71	**Arts, Entertainment, and Recreation**	**296**	**2,650**	**9**
44-45	**Retail Trade**	**1,412**	**11,678**	**8**
441	Motor Vehicle and Parts Dealers	86	1,047	12

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Maui County, HI (15009)

NAICS Code	Description	Total Establishment	Total Employees	Employees Per Establishment
442	Furniture and Home Furnishing Stores	57	333	6
443	Electronics and Appliance Stores	45	256	6
444	Building Material and Garden Equipment and Supplies De	125	947	8
445	Food and Beverage Stores	152	2,369	16
446	Health and Personal Care Stores	79	809	10
447	Gasoline Stations	87	376	4
448	Clothing and Accessories Stores	331	1,984	6
451	Sporting Goods, Hobby, Book and Music Stores	111	528	5
452	General Merchandise Stores	39	1,613	41
453	Miscellaneous Store Retailers	266	1,275	5
454	Nonstore Retailers	34	141	4
52	**Finance and Insurance**	**488**	**1,495**	**3**
521	Monetary Authorities-Central Bank	0	0	0
522	Credit Intermediation and Related Activities	341	920	3
523	Securities, Commercial Contracts, Financial Investment and Related Activities	53	206	4
524	Insurance Carriers and Related Activities	92	363	4
525	Funds, Trusts and Other Financial Vehicles	2	6	3
72	**Accommodation and Food Services**	**681**	**22,840**	**34**
721	Accommodation	151	12,897	85
722	Food Services and Drinking Places	530	9,943	19
81	**Other Services (except Public Administration)**	**924**	**4,278**	**5**
811	Repair and Maintenance	215	619	3
812	Personal and Laundry Services	394	2,055	5
813	Religious, Grant Making, Civic, Professional, Similar Organizations	315	1,604	5

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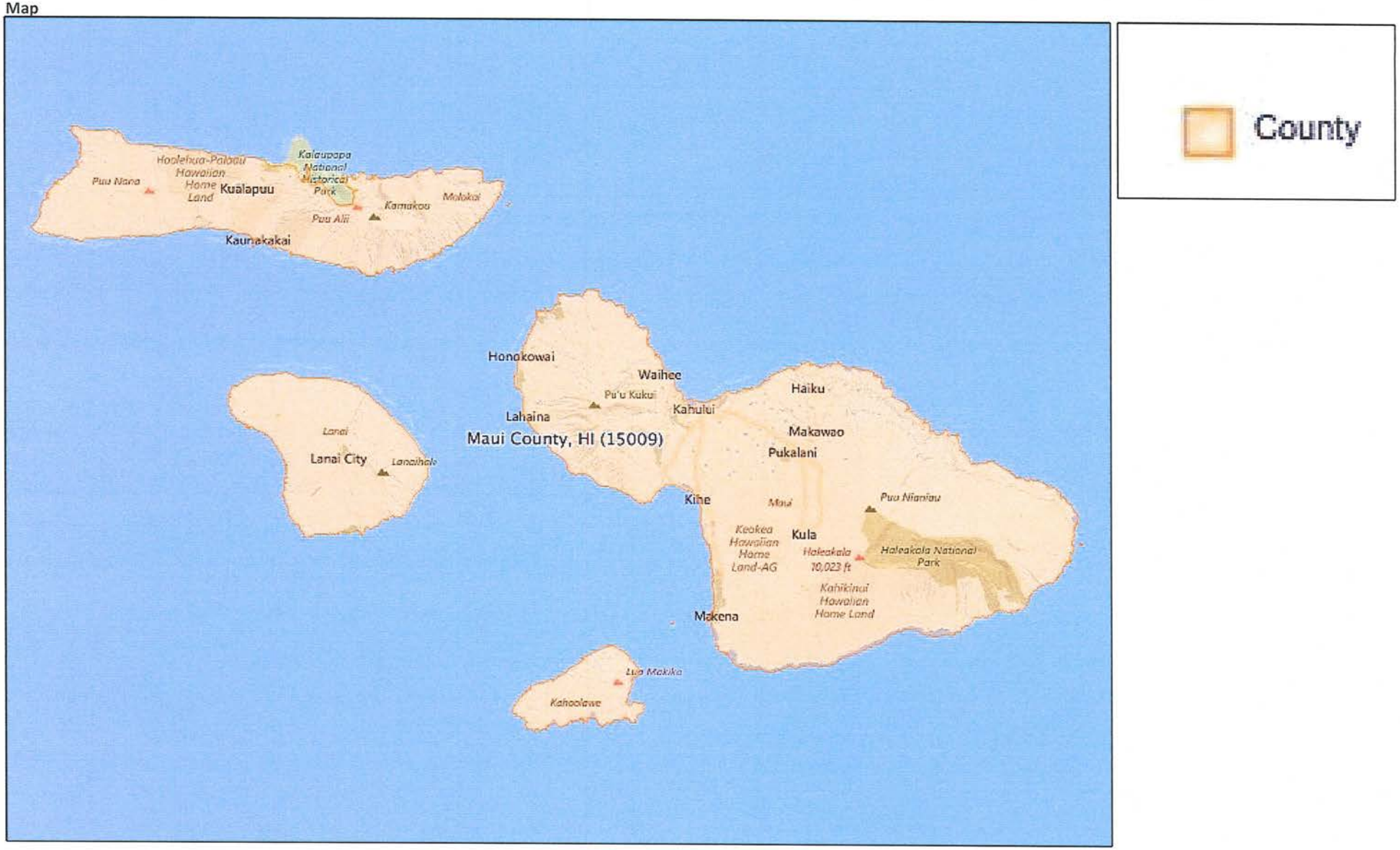
Map



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CENTRAL MAUI

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Description	Aggregate	
	Total	%
Pop-Facts Summary		
Population		
2021 Projection	60,378	
2016 Estimate	57,375	
2010 Census	53,972	
2000 Census	41,160	
Growth 2016 - 2021		5.23%
Growth 2010 - 2016		6.31%
Growth 2000 - 2010		31.13%
Households		
2021 Projection	18,079	
2016 Estimate	17,145	
2010 Census	16,118	
2000 Census	12,720	
Growth 2016 - 2021		5.45%
Growth 2010 - 2016		6.37%
Growth 2000 - 2010		26.71%
Family Households		
2021 Projection	13,249	
2016 Estimate	12,547	
2010 Census	11,776	
2000 Census	9,385	
Growth 2016 - 2021		5.59%
Growth 2010 - 2016		6.55%
Growth 2000 - 2010		25.48%

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Description	Aggregate	
	Total	%
Pop-Facts Demographic Snapshot		
2016 Est. Population by Single-Classification Race	**57,375**	
White Alone	8,110	14.14%
Black or African American Alone	412	0.72%
Amer. Indian and Alaska Native Alone	215	0.37%
Asian Alone	25,147	43.83%
Native Hawaiian and Other Pac. Isl. Alone	7,582	13.21%
Some Other Race Alone	783	1.36%
Two or More Races	15,126	26.36%
2016 Est. Population by Hispanic or Latino Origin	**57,375**	
Not Hispanic or Latino	51,356	89.51%
Hispanic or Latino	6,019	10.49%
Mexican	1,783	29.62%
Puerto Rican	2,614	43.43%
Cuban	46	0.76%
All Other Hispanic or Latino	1,576	26.18%
2016 Est. Hisp. or Latino Pop by Single-Class. Race	**6,019**	
White Alone	1,001	16.63%
Black or African American Alone	24	0.40%
American Indian and Alaska Native Alone	69	1.15%
Asian Alone	731	12.14%
Native Hawaiian and Other Pacific Islander Alone	426	7.08%
Some Other Race Alone	731	12.14%
Two or More Races	3,037	50.46%
2016 Est. Pop by Race, Asian Alone, by Category	**25,147**	
Chinese, except Taiwanese	759	3.02%
Filipino	14,797	58.84%
Japanese	7,279	28.95%
Asian Indian	27	0.11%
Korean	547	2.18%
Vietnamese	107	0.43%
Cambodian	18	0.07%

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Description	Aggregate	
	Total	%
Hmong	0	0.00%
Laotian	7	0.03%
Thai	24	0.10%
All Other Asian Races Including 2+ Category	1,582	6.29%

2016 Est. Population by Ancestry	**57,375**	
Arab	17	0.03%
Czech	0	0.00%
Danish	71	0.12%
Dutch	58	0.10%
English	517	0.90%
French (except Basque)	219	0.38%
French Canadian	19	0.03%
German	1,049	1.83%
Greek	76	0.13%
Hungarian	54	0.09%
Irish	898	1.57%
Italian	393	0.68%
Lithuanian	0	0.00%
United States or American	331	0.58%
Norwegian	113	0.20%
Polish	196	0.34%
Portuguese	1,597	2.78%
Russian	175	0.31%
Scottish	217	0.38%
Scotch-Irish	52	0.09%
Slovak	2	0.00%
Subsaharan African	0	0.00%
Swedish	197	0.34%
Swiss	0	0.00%
Ukrainian	7	0.01%
Welsh	92	0.16%
West Indian (except Hisp. groups)	28	0.05%
Other ancestries	46,208	80.54%
Ancestry Unclassified	4,789	8.35%

2016 Est. Pop Age 5+ by Language Spoken At Home	**53,507**

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Description	Aggregate	
	Total	%
Speak Only English at Home	38,490	71.93%
Speak Asian/Pac. Isl. Lang. at Home	13,963	26.10%
Speak IndoEuropean Language at Home	291	0.54%
Speak Spanish at Home	662	1.24%
Speak Other Language at Home	101	0.19%

2016 Est. Population by Sex	**57,375**	
Male	28,424	49.54%
Female	28,951	50.46%

2016 Est. Population by Age	**57,375**	
Age 0 - 4	3,868	6.74%
Age 5 - 9	3,877	6.76%
Age 10 - 14	3,918	6.83%
Age 15 - 17	2,321	4.05%
Age 18 - 20	2,121	3.70%
Age 21 - 24	2,854	4.97%
Age 25 - 34	7,254	12.64%
Age 35 - 44	7,392	12.88%
Age 45 - 54	7,789	13.58%
Age 55 - 64	6,889	12.01%
Age 65 - 74	4,878	8.50%
Age 75 - 84	2,666	4.65%
Age 85 and over	1,548	2.70%
Age 16 and over	44,954	78.35%
Age 18 and over	43,391	75.63%
Age 21 and over	41,270	71.93%
Age 65 and over	9,092	15.85%
2016 Est. Median Age	**38.3**	
2016 Est. Average Age	**39.0**	

2016 Est. Male Population by Age	**28,424**	
Age 0 - 4	1,997	7.03%
Age 5 - 9	2,019	7.10%
Age 10 - 14	1,985	6.98%
Age 15 - 17	1,167	4.11%
Age 18 - 20	1,097	3.86%
Age 21 - 24	1,483	5.22%

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Description	Aggregate	
	Total	%
Age 25 - 34	3,716	13.07%
Age 35 - 44	3,792	13.34%
Age 45 - 54	3,871	13.62%
Age 55 - 64	3,432	12.07%
Age 65 - 74	2,273	8.00%
Age 75 - 84	1,078	3.79%
Age 85 and over	514	1.81%
2016 Est. Median Age, Male	**37.0**	
2016 Est. Average Age, Male	**37.7**	

2016 Est. Female Population by Age	**28,951**	
Age 0 - 4	1,871	6.46%
Age 5 - 9	1,858	6.42%
Age 10 - 14	1,933	6.68%
Age 15 - 17	1,154	3.99%
Age 18 - 20	1,024	3.54%
Age 21 - 24	1,371	4.74%
Age 25 - 34	3,538	12.22%
Age 35 - 44	3,600	12.43%
Age 45 - 54	3,918	13.53%
Age 55 - 64	3,457	11.94%
Age 65 - 74	2,605	9.00%
Age 75 - 84	1,588	5.49%
Age 85 and over	1,034	3.57%
2016 Est. Median Age, Female	**39.8**	
2016 Est. Average Age, Female	**40.3**	

2016 Est. Pop Age 15+ by Marital Status	**45,712**	
Total, Never Married	14,826	32.43%
Males, Never Married	8,228	18.00%
Females, Never Married	6,598	14.43%
Married, Spouse present	19,661	43.01%
Married, Spouse absent	3,326	7.28%
Widowed	2,884	6.31%
Males Widowed	551	1.21%
Females Widowed	2,333	5.10%
Divorced	5,015	10.97%
Males Divorced	2,211	4.84%

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Description	Aggregate	
	Total	%
Females Divorced	2,804	6.13%
2016 Est. Pop Age 25+ by Edu. Attainment	**38,416**	
Less than 9th grade	1,875	4.88%
Some High School, no diploma	2,280	5.94%
High School Graduate (or GED)	14,215	37.00%
Some College, no degree	8,356	21.75%
Associate Degree	3,500	9.11%
Bachelor's Degree	5,297	13.79%
Master's Degree	2,045	5.32%
Professional School Degree	558	1.45%
Doctorate Degree	290	0.75%
2016 Est. Pop Age 25+ by Edu. Attain., Hisp./Lat.	**3,017**	
No High School Diploma	670	22.21%
High School Graduate	1,110	36.79%
Some College or Associate's Degree	932	30.89%
Bachelor's Degree or Higher	305	10.11%
2016 Est. Households by Household Type	**17,145**	
Family Households	12,547	73.18%
Nonfamily Households	4,598	26.82%
2016 Est. Group Quarters Population	**1,961**	
2016 HHs by Ethnicity, Hispanic/Latino	**1,395**	
2016 Est. Households by HH Income	**17,145**	
Income < $15,000	1,032	6.02%
Income $15,000 - $24,999	1,444	8.42%
Income $25,000 - $34,999	1,476	8.61%
Income $35,000 - $49,999	1,834	10.70%
Income $50,000 - $74,999	2,558	14.92%
Income $75,000 - $99,999	2,257	13.16%
Income $100,000 - $124,999	2,075	12.10%
Income $125,000 - $149,999	1,632	9.52%
Income $150,000 - $199,999	1,584	9.24%

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Description	Aggregate	
	Total	%
Income $200,000 - $249,999	654	3.81%
Income $250,000 - $499,999	492	2.87%
Income $500,000+	107	0.62%
2016 Est. Average Household Income	**$94,246**	
2016 Est. Median Household Income	**$77,531**	

2016 Median HH Inc. by Single-Class. Race or Eth.	
White Alone	$72,489
Black or African American Alone	$69,129
American Indian and Alaska Native Alone	$65,909
Asian Alone	$91,675
Native Hawaiian and Other Pacific Islander Alone	$55,091
Some Other Race Alone	$62,972
Two or More Races	$69,442
Hispanic or Latino	$53,802
Not Hispanic or Latino	$80,220

2016 Est. Family HH Type by Presence of Own Child.	**12,547**	
Married-Couple Family, own children	3,931	31.33%
Married-Couple Family, no own children	4,769	38.01%
Male Householder, own children	572	4.56%
Male Householder, no own children	674	5.37%
Female Householder, own children	1,228	9.79%
Female Householder, no own children	1,373	10.94%

2016 Est. Households by Household Size	**17,145**	
1-person	3,523	20.55%
2-person	4,414	25.75%
3-person	2,952	17.22%
4-person	2,550	14.87%
5-person	1,574	9.18%
6-person	934	5.45%
7-or-more-person	1,198	6.99%
2016 Est. Average Household Size	**3.23**	

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Description	Aggregate	
	Total	%
2016 Est. Households by Presence of People Under 18	**17,145**	
Households with 1 or More People under Age 18:	**7,144**	**41.67%**
Married-Couple Family	4,680	65.51%
Other Family, Male Householder	744	10.41%
Other Family, Female Householder	1,645	23.03%
Nonfamily, Male Householder	58	0.81%
Nonfamily, Female Householder	17	0.24%
Households with No People under Age 18:	**10,001**	**58.33%**
Married-Couple Family	4,023	40.23%
Other Family, Male Householder	499	4.99%
Other Family, Female Householder	958	9.58%
Nonfamily, Male Householder	2,154	21.54%
Nonfamily, Female Householder	2,367	23.67%
2016 Est. Households by Number of Vehicles	**17,145**	
No Vehicles	1,354	7.90%
1 Vehicle	5,252	30.63%
2 Vehicles	6,462	37.69%
3 Vehicles	2,214	12.91%
4 Vehicles	1,107	6.46%
5 or more Vehicles	756	4.41%
2016 Est. Average Number of Vehicles	**2.0**	
2016 Est. Families by Poverty Status	**12,547**	
2016 Families at or Above Poverty	11,871	94.61%
2016 Families at or Above Poverty with Children	6,151	49.02%
2016 Families Below Poverty	676	5.39%
2016 Families Below Poverty with Children	499	3.98%
2016 Est. Pop Age 16+ by Employment Status	**44,954**	
In Armed Forces	79	0.18%
Civilian - Employed	27,635	61.47%
Civilian - Unemployed	2,707	6.02%
Not in Labor Force	14,533	32.33%

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Description	Aggregate	
	Total	%
2016 Est. Civ. Employed Pop 16+ by Class of Worker	**27,581**	
For-Profit Private Workers	18,061	65.48%
Non-Profit Private Workers	1,841	6.67%
Local Government Workers	1,696	6.15%
State Government Workers	3,187	11.56%
Federal Government Workers	439	1.59%
Self-Employed Workers	2,354	8.53%
Unpaid Family Workers	3	0.01%

2016 Est. Civ. Employed Pop 16+ by Occupation	**27,581**	
Architect/Engineer	186	0.67%
Arts/Entertainment/Sports	284	1.03%
Building Grounds Maintenance	2,789	10.11%
Business/Financial Operations	648	2.35%
Community/Social Services	393	1.42%
Computer/Mathematical	143	0.52%
Construction/Extraction	1,520	5.51%
Education/Training/Library	1,479	5.36%
Farming/Fishing/Forestry	287	1.04%
Food Prep/Serving	1,819	6.60%
Health Practitioner/Technician	1,406	5.10%
Healthcare Support	655	2.37%
Maintenance Repair	919	3.33%
Legal	190	0.69%
Life/Physical/Social Science	186	0.67%
Management	1,760	6.38%
Office/Admin. Support	3,919	14.21%
Production	898	3.26%
Protective Services	839	3.04%
Sales/Related	3,715	13.47%
Personal Care/Service	969	3.51%
Transportation/Moving	2,577	9.34%

2016 Est. Pop 16+ by Occupation Classification	**27,581**	
Blue Collar	5,914	21.44%
White Collar	14,309	51.88%
Service and Farm	7,358	26.68%

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Description	Aggregate	
	Total	%
2016 Est. Workers Age 16+ by Transp. to Work	**26,835**	
Drove Alone	19,406	72.32%
Car Pooled	4,705	17.53%
Public Transportation	850	3.17%
Walked	725	2.70%
Bicycle	133	0.50%
Other Means	440	1.64%
Worked at Home	576	2.15%
2016 Est. Workers Age 16+ by Travel Time to Work		
Less than 15 Minutes	11,367	
15 - 29 Minutes	7,175	
30 - 44 Minutes	3,882	
45 - 59 Minutes	2,470	
60 or more Minutes	1,110	
2016 Est. Avg Travel Time to Work in Minutes	**23.00**	
2016 Est. Occupied Housing Units by Tenure	**17,145**	
Owner Occupied	10,513	61.32%
Renter Occupied	6,632	38.68%
2016 Owner Occ. HUs: Avg. Length of Residence	**18.2**	
2016 Renter Occ. HUs: Avg. Length of Residence	**8.8**	
2016 Est. Owner-Occupied Housing Units by Value	**10,513**	
Value Less than $20,000	209	1.99%
Value $20,000 - $39,999	119	1.13%
Value $40,000 - $59,999	68	0.65%
Value $60,000 - $79,999	58	0.55%
Value $80,000 - $99,999	76	0.72%
Value $100,000 - $149,999	242	2.30%
Value $150,000 - $199,999	194	1.85%
Value $200,000 - $299,999	670	6.37%

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Description	Aggregate	
	Total	%
Value $300,000 - $399,999	1,549	14.73%
Value $400,000 - $499,999	2,203	20.96%
Value $500,000 - $749,999	3,365	32.01%
Value $750,000 - $999,999	1,070	10.18%
Value $1,000,000 or more	690	6.56%
2016 Est. Median All Owner-Occupied Housing Value	**$494,031**	

2016 Est. Housing Units by Units in Structure	**18,642**	
1 Unit Attached	1,459	7.83%
1 Unit Detached	12,597	67.57%
2 Units	1,001	5.37%
3 or 4 Units	712	3.82%
5 to 19 Units	1,679	9.01%
20 to 49 Units	437	2.34%
50 or More Units	716	3.84%
Mobile Home or Trailer	41	0.22%
Boat, RV, Van, etc.	0	0.00%

2016 Est. Housing Units by Year Structure Built	**18,642**	
Housing Units Built 2010 or later	1,199	6.43%
Housing Units Built 2000 to 2009	3,512	18.84%
Housing Units Built 1990 to 1999	3,243	17.40%
Housing Units Built 1980 to 1989	2,304	12.36%
Housing Units Built 1970 to 1979	3,126	16.77%
Housing Units Built 1960 to 1969	1,986	10.65%
Housing Units Built 1950 to 1959	1,943	10.42%
Housing Units Built 1940 to 1949	706	3.79%
Housing Unit Built 1939 or Earlier	623	3.34%
2016 Est. Median Year Structure Built	**1984**	

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Selected MCDs (Minor Civil Division (MCD))

Description	Total
Workplace Bus & Emp Summary	
Number of Employees	37,309
Employees per Business	10
Residential Population	57,375
Residential Population per Business	15
Number of Households	17,145
Total Employees Working at Home	576

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Selected MCDs (Minor Civil Division (MCD))

NAICS Code	Description	Total Establishment	Total Employees	Employees Per Establishment
Workplace Business & Employment				
11-81,92	**Total Business**	**3,813**	**37,309**	**10**
11-81	Private Sector	3,669	34,157	9
92	Public Administration	144	3,152	22
11	**Agriculture, Forestry, Fishing and Hunting**	**10**	**48**	**5**
21	**Mining, Quarrying, and Oil and Gas Extraction**	**0**	**0**	**0**
22	**Utilities**	**7**	**510**	**73**
23	**Construction**	**287**	**2,487**	**9**
31-33	**Manufacturing**	**106**	**726**	**7**
42	**Wholesale Trade**	**176**	**2,793**	**16**
48-49	**Transportation and Warehousing**	**111**	**1,658**	**15**
51	**Information**	**67**	**733**	**11**
53	**Real Estate and Rental and Leasing**	**166**	**3,004**	**18**
54	**Professional, Scientific, and Technical Services**	**443**	**1,926**	**4**
55	**Management of Companies and Enterprises**	**0**	**0**	**0**
56	**Administrative, Support, Waste Mgmt Remediation Services**	**167**	**1,286**	**8**
61	**Educational Services**	**52**	**1,670**	**32**
62	**Healthcare and Social Assistance**	**749**	**6,109**	**8**
71	**Arts, Entertainment, and Recreation**	**73**	**667**	**9**
44-45	**Retail Trade**	**481**	**5,405**	**11**
441	Motor Vehicle and Parts Dealers	52	886	17

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Selected MCDs (Minor Civil Division (MCD))

NAICS Code	Description	Total Establishment	Total Employees	Employees Per Establishment
442	Furniture and Home Furnishing Stores	36	234	6
443	Electronics and Appliance Stores	27	113	4
444	Building Material and Garden Equipment and Supplies De	56	614	11
445	Food and Beverage Stores	49	814	17
446	Health and Personal Care Stores	38	361	10
447	Gasoline Stations	38	176	5
448	Clothing and Accessories Stores	51	328	6
451	Sporting Goods, Hobby, Book and Music Stores	46	251	5
452	General Merchandise Stores	11	1,141	104
453	Miscellaneous Store Retailers	63	426	7
454	Nonstore Retailers	14	61	4
52	**Finance and Insurance**	**217**	**1,003**	**5**
521	Monetary Authorities-Central Bank	0	0	0
522	Credit Intermediation and Related Activities	121	566	5
523	Securities, Commercial Contracts, Financial Investment and Related Activities	32	160	5
524	Insurance Carriers and Related Activities	64	277	4
525	Funds, Trusts and Other Financial Vehicles	0	0	0
72	**Accommodation and Food Services**	**165**	**2,420**	**15**
721	Accommodation	12	279	23
722	Food Services and Drinking Places	153	2,141	14
81	**Other Services (except Public Administration)**	**392**	**1,712**	**4**
811	Repair and Maintenance	135	443	3
812	Personal and Laundry Services	135	646	5
813	Religious, Grant Making, Civic, Professional, Similar Organizations	122	623	5

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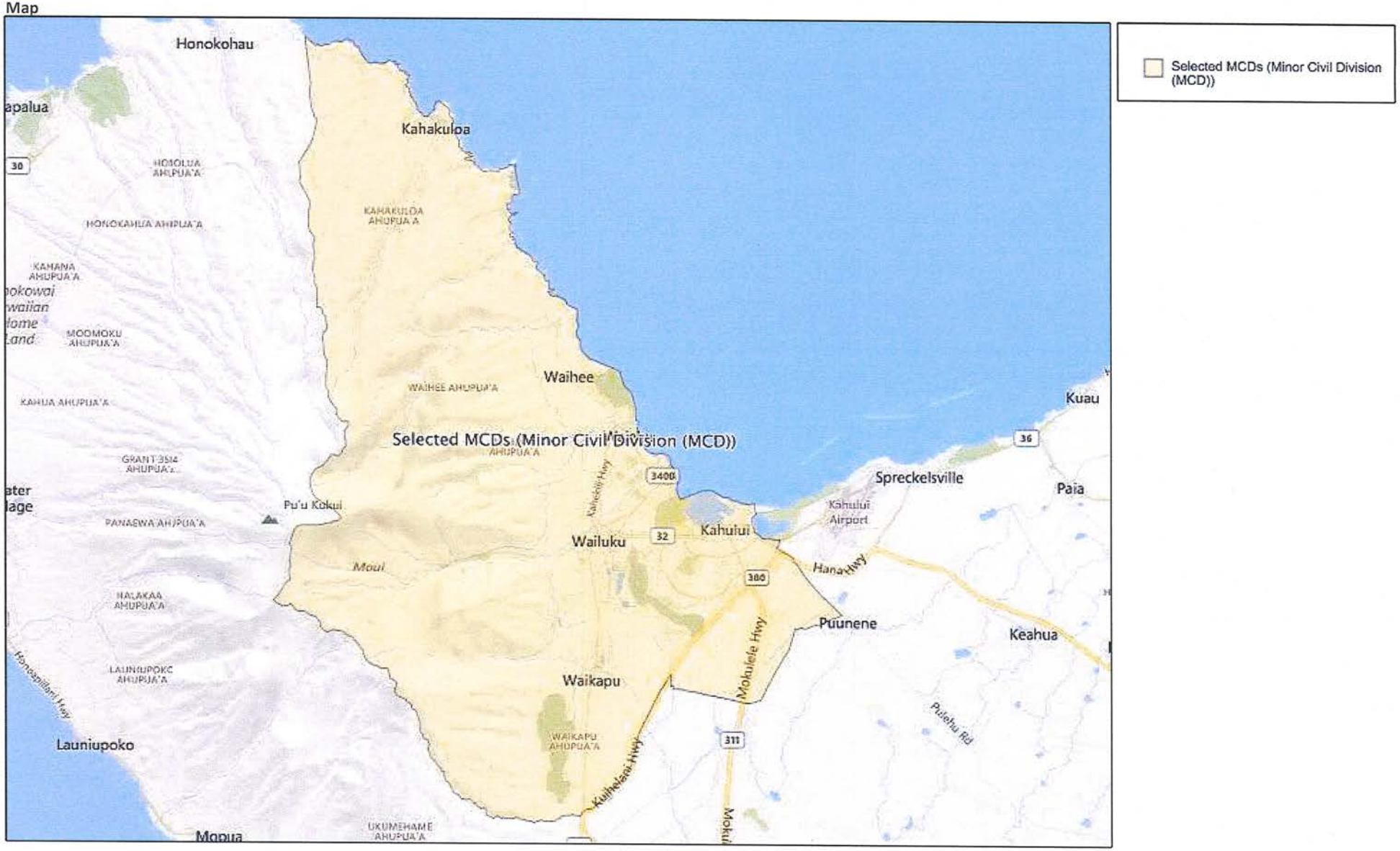
Map



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KIHEI

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Description	Kihei CCD, HI (1500991530)	
	Total	%
Pop-Facts Summary		
Population		
2021 Projection	28,707	
2016 Estimate	26,518	
2010 Census	23,677	
2000 Census	19,843	
Growth 2016 - 2021		8.25%
Growth 2010 - 2016		12.00%
Growth 2000 - 2010		19.32%
Households		
2021 Projection	11,742	
2016 Estimate	10,734	
2010 Census	9,401	
2000 Census	7,557	
Growth 2016 - 2021		9.39%
Growth 2010 - 2016		14.18%
Growth 2000 - 2010		24.40%
Family Households		
2021 Projection	6,744	
2016 Estimate	6,181	
2010 Census	5,435	
2000 Census	4,614	
Growth 2016 - 2021		9.11%
Growth 2010 - 2016		13.73%
Growth 2000 - 2010		17.79%

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Description	Kihei CCD, HI (1500991530)	
	Total	%
Pop-Facts Demographic Snapshot		
2016 Est. Population by Single-Classification Race	**26,518**	
White Alone	14,003	52.81%
Black or African American Alone	506	1.91%
Amer. Indian and Alaska Native Alone	220	0.83%
Asian Alone	5,207	19.64%
Native Hawaiian and Other Pac. Isl. Alone	1,558	5.88%
Some Other Race Alone	906	3.42%
Two or More Races	4,118	15.53%
2016 Est. Population by Hispanic or Latino Origin	**26,518**	
Not Hispanic or Latino	23,494	88.60%
Hispanic or Latino	3,024	11.40%
Mexican	1,618	53.51%
Puerto Rican	553	18.29%
Cuban	42	1.39%
All Other Hispanic or Latino	811	26.82%
2016 Est. Hisp. or Latino Pop by Single-Class. Race	**3,024**	
White Alone	1,057	34.95%
Black or African American Alone	24	0.79%
American Indian and Alaska Native Alone	51	1.69%
Asian Alone	136	4.50%
Native Hawaiian and Other Pacific Islander Alone	118	3.90%
Some Other Race Alone	852	28.17%
Two or More Races	786	25.99%
2016 Est. Pop by Race, Asian Alone, by Category	**5,207**	
Chinese, except Taiwanese	560	10.75%
Filipino	3,007	57.75%
Japanese	858	16.48%
Asian Indian	43	0.83%
Korean	66	1.27%
Vietnamese	43	0.83%
Cambodian	0	0.00%

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Description	Kihei CCD, HI (1500991530)	
	Total	%
Hmong	0	0.00%
Laotian	0	0.00%
Thai	17	0.33%
All Other Asian Races Including 2+ Category	613	11.77%
2016 Est. Population by Ancestry	**26,518**	
Arab	44	0.17%
Czech	52	0.20%
Danish	150	0.57%
Dutch	188	0.71%
English	1,163	4.39%
French (except Basque)	498	1.88%
French Canadian	55	0.21%
German	2,231	8.41%
Greek	57	0.21%
Hungarian	181	0.68%
Irish	1,174	4.43%
Italian	711	2.68%
Lithuanian	75	0.28%
United States or American	358	1.35%
Norwegian	245	0.92%
Polish	400	1.51%
Portuguese	654	2.47%
Russian	120	0.45%
Scottish	213	0.80%
Scotch-Irish	224	0.84%
Slovak	14	0.05%
Subsaharan African	15	0.06%
Swedish	175	0.66%
Swiss	160	0.60%
Ukrainian	0	0.00%
Welsh	261	0.98%
West Indian (except Hisp. groups)	0	0.00%
Other ancestries	13,685	51.61%
Ancestry Unclassified	3,415	12.88%
2016 Est. Pop Age 5+ by Language Spoken At Home	**25,085**	

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Description	Kihei CCD, HI (1500991530)	
	Total	%
Speak Only English at Home	20,861	83.16%
Speak Asian/Pac. Isl. Lang. at Home	2,959	11.80%
Speak IndoEuropean Language at Home	468	1.87%
Speak Spanish at Home	642	2.56%
Speak Other Language at Home	155	0.62%

2016 Est. Population by Sex	**26,518**	
Male	13,612	51.33%
Female	12,906	48.67%

2016 Est. Population by Age	**26,518**	
Age 0 - 4	1,433	5.40%
Age 5 - 9	1,519	5.73%
Age 10 - 14	1,507	5.68%
Age 15 - 17	879	3.31%
Age 18 - 20	805	3.04%
Age 21 - 24	1,084	4.09%
Age 25 - 34	3,670	13.84%
Age 35 - 44	3,878	14.62%
Age 45 - 54	3,873	14.61%
Age 55 - 64	3,978	15.00%
Age 65 - 74	2,626	9.90%
Age 75 - 84	930	3.51%
Age 85 and over	336	1.27%
Age 16 and over	21,769	82.09%
Age 18 and over	21,180	79.87%
Age 21 and over	20,375	76.83%
Age 65 and over	3,892	14.68%
2016 Est. Median Age	**41.1**	
2016 Est. Average Age	**40.5**	

2016 Est. Male Population by Age	**13,612**	
Age 0 - 4	742	5.45%
Age 5 - 9	782	5.74%
Age 10 - 14	787	5.78%
Age 15 - 17	473	3.47%
Age 18 - 20	434	3.19%
Age 21 - 24	575	4.22%

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Description	Kihei CCD, HI (1500991530)	
	Total	%
Age 25 - 34	1,902	13.97%
Age 35 - 44	2,071	15.21%
Age 45 - 54	1,965	14.44%
Age 55 - 64	2,031	14.92%
Age 65 - 74	1,303	9.57%
Age 75 - 84	431	3.17%
Age 85 and over	116	0.85%
2016 Est. Median Age, Male	**40.4**	
2016 Est. Average Age, Male	**39.8**	

2016 Est. Female Population by Age	**12,906**	
Age 0 - 4	691	5.35%
Age 5 - 9	737	5.71%
Age 10 - 14	720	5.58%
Age 15 - 17	406	3.15%
Age 18 - 20	371	2.87%
Age 21 - 24	509	3.94%
Age 25 - 34	1,768	13.70%
Age 35 - 44	1,807	14.00%
Age 45 - 54	1,908	14.78%
Age 55 - 64	1,947	15.09%
Age 65 - 74	1,323	10.25%
Age 75 - 84	499	3.87%
Age 85 and over	220	1.70%
2016 Est. Median Age, Female	**41.9**	
2016 Est. Average Age, Female	**41.1**	

2016 Est. Pop Age 15+ by Marital Status	**22,059**	
Total, Never Married	7,062	32.01%
Males, Never Married	4,092	18.55%
Females, Never Married	2,970	13.46%
Married, Spouse present	9,733	44.12%
Married, Spouse absent	1,373	6.22%
Widowed	951	4.31%
Males Widowed	148	0.67%
Females Widowed	803	3.64%
Divorced	2,940	13.33%
Males Divorced	1,433	6.50%

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Description	Kihei CCD, HI (1500991530)	
	Total	%
Females Divorced	1,507	6.83%
2016 Est. Pop Age 25+ by Edu. Attainment	**19,291**	
Less than 9th grade	475	2.46%
Some High School, no diploma	773	4.01%
High School Graduate (or GED)	5,131	26.60%
Some College, no degree	5,324	27.60%
Associate Degree	2,063	10.69%
Bachelor's Degree	3,983	20.65%
Master's Degree	1,006	5.21%
Professional School Degree	338	1.75%
Doctorate Degree	198	1.03%
2016 Est. Pop Age 25+ by Edu. Attain., Hisp./Lat.	**1,710**	
No High School Diploma	330	19.30%
High School Graduate	310	18.13%
Some College or Associate's Degree	828	48.42%
Bachelor's Degree or Higher	242	14.15%
2016 Est. Households by Household Type	**10,734**	
Family Households	6,181	57.58%
Nonfamily Households	4,553	42.42%
2016 Est. Group Quarters Population	**249**	
2016 HHs by Ethnicity, Hispanic/Latino	**882**	
2016 Est. Households by HH Income	**10,734**	
Income < $15,000	1,112	10.36%
Income $15,000 - $24,999	843	7.85%
Income $25,000 - $34,999	1,071	9.98%
Income $35,000 - $49,999	1,448	13.49%
Income $50,000 - $74,999	1,996	18.60%
Income $75,000 - $99,999	1,504	14.01%
Income $100,000 - $124,999	1,072	9.99%
Income $125,000 - $149,999	514	4.79%
Income $150,000 - $199,999	483	4.50%

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Description	Kihei CCD, HI (1500991530)	
	Total	%
Income $200,000 - $249,999	242	2.25%
Income $250,000 - $499,999	311	2.90%
Income $500,000+	138	1.29%
2016 Est. Average Household Income	**$81,896**	
2016 Est. Median Household Income	**$61,185**	

2016 Median HH Inc. by Single-Class. Race or Eth.	
White Alone	$56,946
Black or African American Alone	$62,500
American Indian and Alaska Native Alone	$69,355
Asian Alone	$72,672
Native Hawaiian and Other Pacific Islander Alone	$43,375
Some Other Race Alone	$72,297
Two or More Races	$67,224
Hispanic or Latino	$46,049
Not Hispanic or Latino	$62,902

2016 Est. Family HH Type by Presence of Own Child.	**6,181**	
Married-Couple Family, own children	1,777	28.75%
Married-Couple Family, no own children	2,765	44.73%
Male Householder, own children	285	4.61%
Male Householder, no own children	303	4.90%
Female Householder, own children	605	9.79%
Female Householder, no own children	446	7.22%

2016 Est. Households by Household Size	**10,734**	
1-person	3,278	30.54%
2-person	3,791	35.32%
3-person	1,561	14.54%
4-person	1,023	9.53%
5-person	549	5.11%
6-person	268	2.50%
7-or-more-person	264	2.46%
2016 Est. Average Household Size	**2.45**	

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Description	Kihei CCD, HI (1500991530)	
	Total	%
2016 Est. Households by Presence of People Under 18	**10,734**	
Households with 1 or More People under Age 18:	**3,082**	**28.71%**
Married-Couple Family	1,967	63.82%
Other Family, Male Householder	358	11.62%
Other Family, Female Householder	708	22.97%
Nonfamily, Male Householder	35	1.14%
Nonfamily, Female Householder	14	0.45%
Households with No People under Age 18:	**7,652**	**71.29%**
Married-Couple Family	2,576	33.66%
Other Family, Male Householder	230	3.01%
Other Family, Female Householder	342	4.47%
Nonfamily, Male Householder	2,413	31.53%
Nonfamily, Female Householder	2,091	27.33%
2016 Est. Households by Number of Vehicles	**10,734**	
No Vehicles	859	8.00%
1 Vehicle	4,149	38.65%
2 Vehicles	4,051	37.74%
3 Vehicles	950	8.85%
4 Vehicles	508	4.73%
5 or more Vehicles	217	2.02%
2016 Est. Average Number of Vehicles	**1.7**	
2016 Est. Families by Poverty Status	**6,181**	
2016 Families at or Above Poverty	5,597	90.55%
2016 Families at or Above Poverty with Children	2,288	37.02%
2016 Families Below Poverty	584	9.45%
2016 Families Below Poverty with Children	439	7.10%
2016 Est. Pop Age 16+ by Employment Status	**21,769**	
In Armed Forces	36	0.17%
Civilian - Employed	14,872	68.32%
Civilian - Unemployed	980	4.50%
Not in Labor Force	5,881	27.02%

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Description	Kihei CCD, HI (1500991530)	
	Total	%
2016 Est. Civ. Employed Pop 16+ by Class of Worker	**14,825**	
For-Profit Private Workers	9,869	66.57%
Non-Profit Private Workers	902	6.08%
Local Government Workers	360	2.43%
State Government Workers	1,029	6.94%
Federal Government Workers	334	2.25%
Self-Employed Workers	2,315	15.62%
Unpaid Family Workers	16	0.11%

2016 Est. Civ. Employed Pop 16+ by Occupation	**14,825**	
Architect/Engineer	74	0.50%
Arts/Entertainment/Sports	342	2.31%
Building Grounds Maintenance	1,078	7.27%
Business/Financial Operations	301	2.03%
Community/Social Services	147	0.99%
Computer/Mathematical	112	0.76%
Construction/Extraction	1,212	8.18%
Education/Training/Library	908	6.12%
Farming/Fishing/Forestry	93	0.63%
Food Prep/Serving	2,341	15.79%
Health Practitioner/Technician	556	3.75%
Healthcare Support	247	1.67%
Maintenance Repair	428	2.89%
Legal	91	0.61%
Life/Physical/Social Science	121	0.82%
Management	1,069	7.21%
Office/Admin. Support	1,792	12.09%
Production	391	2.64%
Protective Services	329	2.22%
Sales/Related	1,751	11.81%
Personal Care/Service	892	6.02%
Transportation/Moving	550	3.71%

2016 Est. Pop 16+ by Occupation Classification	**14,825**	
Blue Collar	2,581	17.41%
White Collar	7,264	49.00%
Service and Farm	4,980	33.59%

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Description	Kihei CCD, HI (1500991530)	
	Total	%
2016 Est. Workers Age 16+ by Transp. to Work	**14,238**	
Drove Alone	10,567	74.22%
Car Pooled	1,502	10.55%
Public Transportation	445	3.13%
Walked	198	1.39%
Bicycle	312	2.19%
Other Means	299	2.10%
Worked at Home	915	6.43%
2016 Est. Workers Age 16+ by Travel Time to Work		
Less than 15 Minutes	4,635	
15 - 29 Minutes	5,148	
30 - 44 Minutes	2,031	
45 - 59 Minutes	693	
60 or more Minutes	491	
2016 Est. Avg Travel Time to Work in Minutes	**23.00**	
2016 Est. Occupied Housing Units by Tenure	**10,734**	
Owner Occupied	5,308	49.45%
Renter Occupied	5,426	50.55%
2016 Owner Occ. HUs: Avg. Length of Residence	**13.4**	
2016 Renter Occ. HUs: Avg. Length of Residence	**6.4**	
2016 Est. Owner-Occupied Housing Units by Value	**5,308**	
Value Less than $20,000	72	1.36%
Value $20,000 - $39,999	25	0.47%
Value $40,000 - $59,999	10	0.19%
Value $60,000 - $79,999	6	0.11%
Value $80,000 - $99,999	1	0.02%
Value $100,000 - $149,999	152	2.86%
Value $150,000 - $199,999	295	5.56%
Value $200,000 - $299,999	342	6.44%

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Description	Kihei CCD, HI (1500991530)	
	Total	%
Value $300,000 - $399,999	729	13.73%
Value $400,000 - $499,999	972	18.31%
Value $500,000 - $749,999	1,529	28.81%
Value $750,000 - $999,999	677	12.75%
Value $1,000,000 or more	498	9.38%
2016 Est. Median All Owner-Occupied Housing Value	**$508,175**	

2016 Est. Housing Units by Units in Structure	**16,332**	
1 Unit Attached	748	4.58%
1 Unit Detached	5,223	31.98%
2 Units	771	4.72%
3 or 4 Units	702	4.30%
5 to 19 Units	3,384	20.72%
20 to 49 Units	2,490	15.25%
50 or More Units	3,014	18.45%
Mobile Home or Trailer	0	0.00%
Boat, RV, Van, etc.	0	0.00%

2016 Est. Housing Units by Year Structure Built	**16,332**	
Housing Units Built 2010 or later	1,542	9.44%
Housing Units Built 2000 to 2009	2,341	14.33%
Housing Units Built 1990 to 1999	2,908	17.81%
Housing Units Built 1980 to 1989	3,879	23.75%
Housing Units Built 1970 to 1979	4,721	28.91%
Housing Units Built 1960 to 1969	502	3.07%
Housing Units Built 1950 to 1959	246	1.51%
Housing Units Built 1940 to 1949	140	0.86%
Housing Unit Built 1939 or Earlier	53	0.32%
2016 Est. Median Year Structure Built	**1986**	

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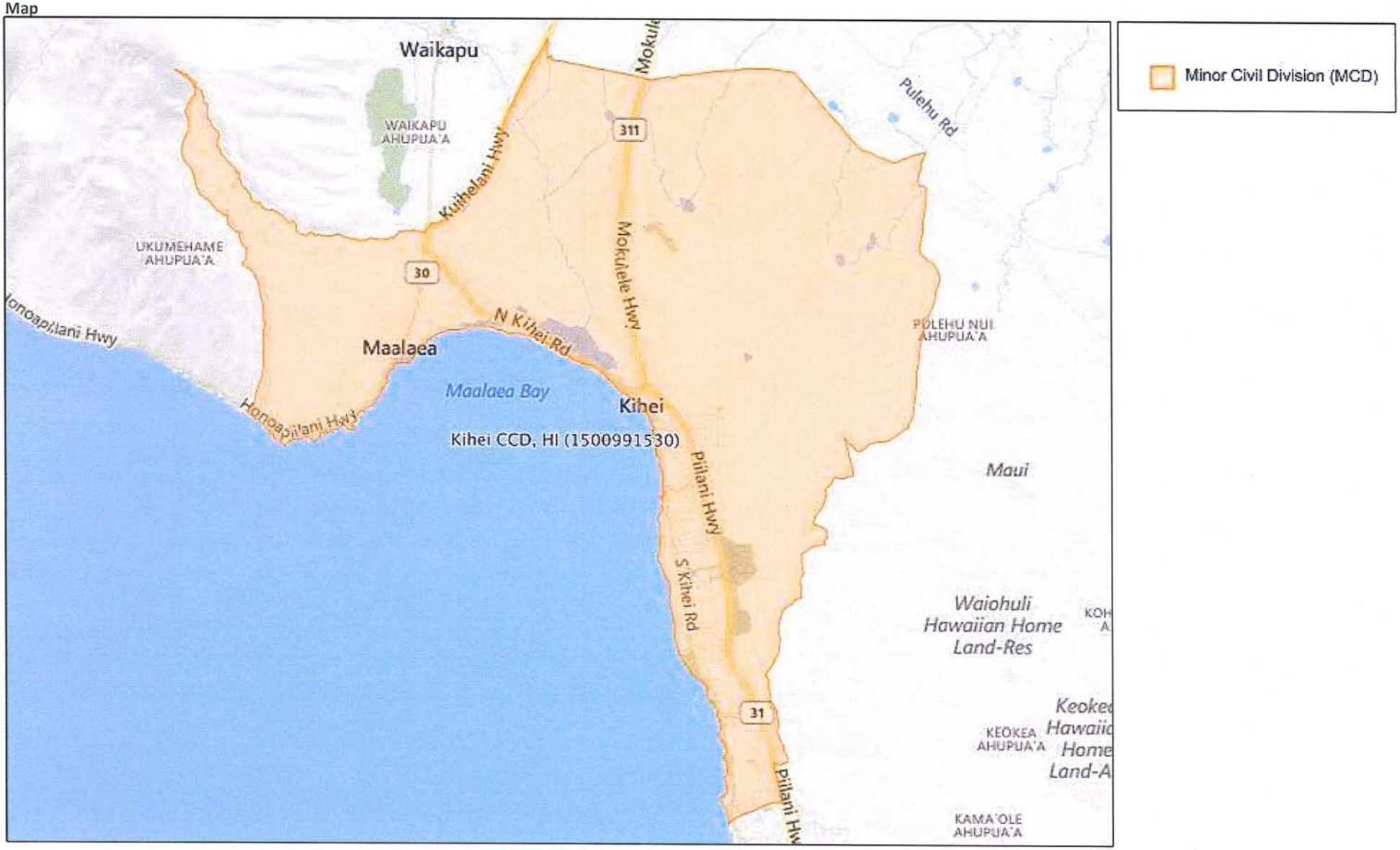
Map



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Kihei CCD, HI (1500991530)

Description	Total
Workplace Bus & Emp Summary	
Number of Employees	8,860
Employees per Business	7
Residential Population	26,518
Residential Population per Business	20
Number of Households	10,734
Total Employees Working at Home	915

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Kihei CCD, HI (1500991530)

NAICS Code	Description	Total Establishment	Total Employees	Employees Per Establishment
Workplace Business & Employment				
11-81,92	**Total Business**	**1,342**	**8,860**	**7**
11-81	Private Sector	1,330	8,736	7
92	Public Administration	12	124	10
11	**Agriculture, Forestry, Fishing and Hunting**	**3**	**108**	**36**
21	**Mining, Quarrying, and Oil and Gas Extraction**	**0**	**0**	**0**
22	**Utilities**	**2**	**8**	**4**
23	**Construction**	**125**	**725**	**6**
31-33	**Manufacturing**	**21**	**92**	**4**
42	**Wholesale Trade**	**17**	**95**	**6**
48-49	**Transportation and Warehousing**	**31**	**196**	**6**
51	**Information**	**11**	**66**	**6**
53	**Real Estate and Rental and Leasing**	**172**	**958**	**6**
54	**Professional, Scientific, and Technical Services**	**116**	**629**	**5**
55	**Management of Companies and Enterprises**	**0**	**0**	**0**
56	**Administrative, Support, Waste Mgmt Remediation Services**	**74**	**205**	**3**
61	**Educational Services**	**21**	**434**	**21**
62	**Healthcare and Social Assistance**	**154**	**684**	**4**
71	**Arts, Entertainment, and Recreation**	**50**	**417**	**8**
44-45	**Retail Trade**	**179**	**1,191**	**7**
441	Motor Vehicle and Parts Dealers	11	49	4

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Kihei CCD, HI (1500991530)

NAICS Code	Description	Total Establishment	Total Employees	Employees Per Establishment
442	Furniture and Home Furnishing Stores	4	8	2
443	Electronics and Appliance Stores	8	20	2
444	Building Material and Garden Equipment and Supplies De	11	59	5
445	Food and Beverage Stores	16	363	23
446	Health and Personal Care Stores	12	132	11
447	Gasoline Stations	14	89	6
448	Clothing and Accessories Stores	39	212	5
451	Sporting Goods, Hobby, Book and Music Stores	14	65	5
452	General Merchandise Stores	5	30	6
453	Miscellaneous Store Retailers	40	146	4
454	Nonstore Retailers	5	18	4
52	**Finance and Insurance**	**71**	**141**	**2**
521	Monetary Authorities-Central Bank	0	0	0
522	Credit Intermediation and Related Activities	49	88	2
523	Securities, Commercial Contracts, Financial Investment and Related Activities	8	18	2
524	Insurance Carriers and Related Activities	14	35	2
525	Funds, Trusts and Other Financial Vehicles	0	0	0
72	**Accommodation and Food Services**	**126**	**2,006**	**16**
721	Accommodation	27	563	21
722	Food Services and Drinking Places	99	1,443	15
81	**Other Services (except Public Administration)**	**157**	**781**	**5**
811	Repair and Maintenance	30	70	2
812	Personal and Laundry Services	93	317	3
813	Religious, Grant Making, Civic, Professional, Similar Organizations	34	394	12

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Map

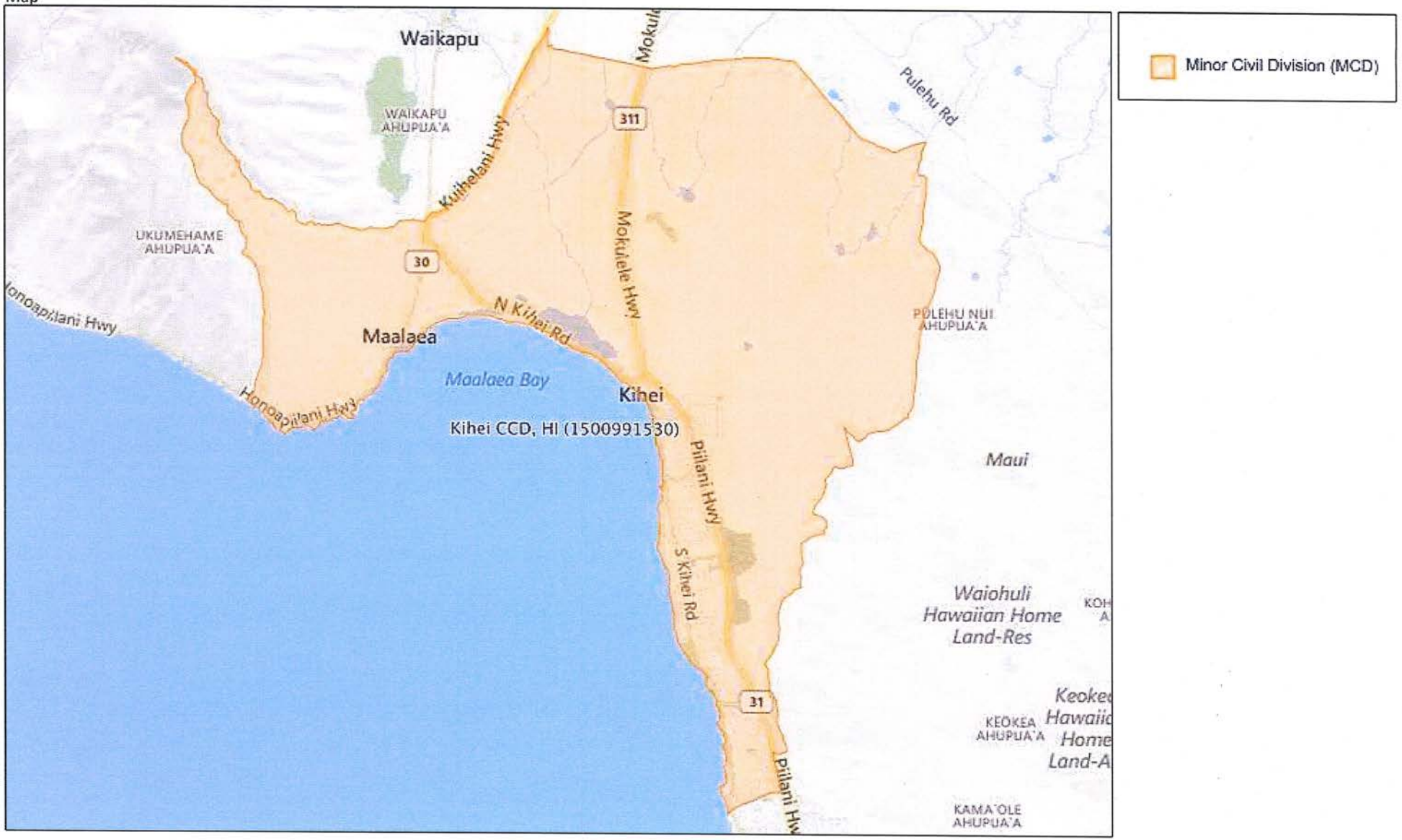

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EXHIBIT C

Current County Zoning Ordinance

M-1 Light Industrial District

Chapter 19.24 - M-1 LIGHT INDUSTRIAL DISTRICT
Sections:

FOOTNOTE(S):

--- (6) ---

Editor's note— Sec. 2 of Ord. No. 3975, effective Sept. 24, 2012, amended ch. 19.24 in its entirety to read as herein set out. Former ch. 19.24 pertained to the same subject matter, consisted of §§ 19.24.010—19.24.050; and derived from § 8-1.12 of the prior code.

19.24.010 - Purpose and intent.

The M-1 light industrial district is designed to contain mostly warehousing and distribution types of activity, and permits most compounding, assembly, or treatment of articles or materials with the exception of heavy manufacturing and processing of raw materials. Residential uses are excluded except for dwelling units located above or below the first floor and apartments. (Ord. No. 3975, § 2, 2012)

19.24.020 - Permitted uses.

A. Within the M-1 light industrial district, no building, structure or premises shall be used and no building or structure hereafter erected, structurally altered, replaced, or enlarged except for one or more of the following uses:

Uses	Notes and Exceptions
Any use permitted in a B-1, B-2, or B-3 business district; provided, however, that no building, structure or portion thereof shall be hereafter erected, converted, or moved onto any lot in an M-1 district for dwelling purposes, including hotels and motels, except for dwelling units located above or below the first floor and apartments	
Animal kennels	
Apartment houses	
Assembly of electrical appliances, radios and phonographs including the manufacture of small parts such as coils, condensers crystal holders and the like	
Carpet cleaning plants	
Cold storage plants	
Commercial laundries	
Craft cabinet and furniture manufacturing	
Education, specialized	
Farm implement sales and service	
General food, fruit and vegetable processing and manufacturing plants	
Harbor facilities	
Ice cream and milk producing, manufacturing and storage	
Laboratories—experimental, photo or motion picture, film or testing	
Light and heavy equipment and product display rooms, storage and service	
Machine shop or other metal working shop	
Manufacture, compounding or treatment of articles or merchandise from the following previously prepared materials: aluminum, bone, cellophane, canvas, cloth, cork, feathers, felt, fiber, fur, glass, hair, horn, leather, plastics, precious or semi-precious metals or stones, shell, tobacco and wood	
Manufacture, compounding, processing, packing or treatment of such products as candy, cosmetics, drugs, perfumes, pharmaceutical, toiletries, and food products	Except the rendering or refining of fats and oils
Manufacture, dyeing and printing of cloth fabrics and wearing apparel	
Manufacture of musical instruments, toys, novelties and rubber and metal stamps	
Manufacture of pottery and figurines or other similar ceramic products	
Milk bottling or central distribution stations	
Mortuaries and morgues	
Plumbing shops	

Poultry or rabbit slaughter incidental to a retail business on the same premises	
Production facility, multimedia	
Radio transmitting and television stations; provided, that towers are of the self-sustaining type without guys	
Replating shop	
Retail lumber yard including mill and sash work	Mill and sash work shall be conducted within a completely enclosed building
Small boat building	
Soda water and soft drink bottling and distribution plants	
Tire repair operation including recapping and retreading	
Utility facilities, minor, and substations up to, and including, 69 kv transmission	
Warehouse, storage and loft buildings	
Wearing apparel manufacturing	
Wholesale business, storage buildings, nonexplosive goods and warehouses	

(Ord. No. 3975, § 2, 2012)

19.24.030 - Accessory uses and structures.

The following uses and structures, located on the same lot, are deemed accessory, customary, incidental, usual and necessary to the above permitted uses in the district:

Uses:

Energy systems small-scale

Fences, walls, patios, decks and other landscape features

Garages, porte-cochere, mailboxes, ground signs, and trash enclosures

Security/watchman or custodian outbuildings

Subordinate uses and structures which are determined the planning director to be clearly incidental and customary to the permitted uses listed herein (Ord. No. 3975, § 2, 2012)

19.24.040 - Reserved.

19.24.050 - Development standards.

	M-1	Notes and Exceptions
Minimum lot area (square feet)	7,500	Except for utility facilities minor, which shall have no minimum lot area
Minimum lot width (in feet)	65	
Maximum building height (in feet)	60	Except that vent pipes, fans, chimneys, antennae, and equipment used for small scale energy systems on roofs shall not exceed 70 feet in total height
Minimum yard setback (in feet)		
Front	0 or the same as the adjoining zoning category whichever is greater	Where the setback of the adjoining non-industrial zoned parcel is less than 10 feet, a minimum setback of 10 feet shall be applied
Side and rear	0 or the same as the adjoining zoning category whichever is greater	
Freestanding antenna or wind turbine	Maximum height of 75 feet and shall be setback 1 foot for every foot in height from all property	

structures height and setback	lines	
Accessory structures allowed within setback area	Boundary walls, parking area, trash enclosures, and ground signs	
Enclosure requirement	All uses are to be conducted wholly within a completely enclosed building, or within an area enclosed on all sides except the front of the lot, by a solid fence or wall or cyclone fence at least 6 feet in height	

(Ord. No. 3975, § 2, 2012)

19.24.060 - Rulemaking authority.

The planning director may adopt rules to implement this chapter. (Ord. No. 3975, § 2, 2012)

Chapter 19.20 - B-3 CENTRAL BUSINESS DISTRICT
Sections:

19.20.010 - Purpose and intent.

The B-3 central business district permits general business enterprises, particularly financial, governmental, commercial, and professional activities. Its distinguishing feature is the greater height limit permitted in the area. Manufacturing and nuisance industries are excluded from the zone.

(Ord. No. 4141, § 1, 2014)

19.20.020 - Permitted uses.

Within the B-3 central business district, the following uses shall be permitted:

Permitted uses	Criteria or limitations
Amusement and recreational activities	Conducted wholly within a completely enclosed building
Animal hospitals, including boarding	
Auditoriums, theaters, gymnasiums including fitness centers, private clubs, and dance halls	
Automobile services	No automobile repair
Baseball or football stadiums and other sport activities	
Building and premises used, owned, or operated by government agencies, including community centers	
Catering establishments	
Communication equipment, antennae or towers	
Day care facilities	
Drive-in restaurants	
Eating and drinking establishments	
Education, specialized	
Educational institutions	
Farmer's market	
General merchandising	Except for equipment rentals, sales yards, and plumbing shops
General office	
Libraries	
Marinas	
Multifamily dwellings, duplexes, and bungalow courts	
Museums	
Nursing and convalescent homes	
Parking structures and lots	
Parks and playgrounds	
Personal and business services	
Pet shops	
Recycling collection center	Conducted wholly within a completely enclosed building or within an area enclosed on all sides by a solid fence or wall at least six feet in height; and provided, that no goods, materials, or objects shall be stacked higher than the fence or walls so erected
Redemption center	

Religious, benevolent, or philanthropic societies, civic organizations, and quasi-public uses	
Sanitariums	
Service business residential ("SBR") service establishments	
Swap meets and open air markets	
Transient vacation rentals	Not exceeding twenty bedrooms; except on Molokai, where a special use permit shall be required
Other similar businesses or commercial enterprises or activities that are not detrimental to the welfare of the surrounding area	Provided, however, that such uses shall be approved by the appropriate planning commission as conforming to the intent of this article

(Ord. No. 4141, § 1, 2014)

19.20.030 - Accessory uses.

A. The following uses, located on the same lot, are deemed accessory, customary, incidental, usual, and necessary to the permitted uses in the B-3 central business district:

Accessory uses	Criteria or limitations
Dwelling units	One or more, located above or below the first floor of a permitted use
Energy systems, small-scale	Provided there will be no detrimental or nuisance effect upon neighbors
Fences	
Other uses that are determined by the director of planning to be clearly incidental and customary to a permitted use	

B. The following uses, located on a nearby lot, are also deemed accessory, customary, incidental, usual, and necessary to the permitted uses in the B-3 central business district:

Accessory uses	Criteria or limitations
Energy systems, small-scale	Provided the system is within a distance of four hundred feet of the nearest point of the lot it serves and there will be no detrimental or nuisance effect upon neighbors

(Ord. No. 4141, § 1, 2014)

19.20.040 - Special uses.

The following are special uses in the B-3 central business district, and approval of the appropriate planning commission shall be obtained, upon conformance with the intent of this article and subject to such terms and conditions as may be warranted and required:

Special uses	Criteria or limitations
Mortuaries	
Transient vacation rentals	Twenty-one to fifty bedrooms; except on Molokai, where the maximum number of bedrooms and use shall be determined by the planning commission

(Ord. No. 4141, § 1, 2014)

19.20.050 - Development standards.

The development standards in the B-3 central business district shall be as follows:

	B-3	Notes and exceptions
Minimum lot area (square feet)	6,000	
Minimum lot width (in feet)	60	
Maximum building height (in feet)	144	Except that vent pipes, fans, chimneys, antennae, and equipment used for small-scale energy systems on roofs shall not exceed 155 feet
Floor area ratio	400%	
Minimum yard setback (in feet)		
Front	None	
Side and rear	0 or the same as the adjoining zoning category whichever is greater	
Maximum height and minimum setback for free-standing antennae or wind turbine structures	Maximum height of 50 feet; minimum setback of 1 foot for each foot in height, from all property lines	
Accessory structures within setback area	Mail boxes, trash enclosures, boundary walls, and ground signs	

(Ord. No. 4141, § 1, 2014)

19.20.060 - Rule making authority.

The director of planning may adopt rules to implement this chapter.

(Ord. No. 4141, § 1, 2014)

Chapter 19.18 - B-2 COMMUNITY BUSINESS DISTRICT
Sections:

FOOTNOTE(S):
--- (4) ---

Editor's note— Ord. No. 4088, § 7, adopted in 2013, amended former Ch. 19.18, §§ 19.18.010—19.18.050, in its entirety to read as herein set out. Former Ch. 19.18 pertained to similar subject matter and derived from the prior code, § 8.19; Ord. No. 1960, §§ 1, 2, 1990; Ord. No. 2609, § 6, 1997; Ord. No. 3941, § 8, 2012.

19.18.060 - Rule making authority.
19.18.010 - Purpose and intent.

A B-2 community business district is intended to provide all types of goods and services for the community, with the exception of those uses more generally associated with an industrial district, but at a lower intensity of use than in the B-3 central business district.

(Ord. No. 4088, § 7, 2013)

19.18.020 - Permitted uses.

Within the B-2 community business district, the following uses shall be permitted:

Permitted uses	Criteria or limitations
Amusement and recreational activities	
Animal hospitals including boarding	
Auditoriums, theaters, and gymnasiums including fitness centers, private clubs, and dance halls	
Automobile services	Provided all automobile repair operations are conducted wholly within a completely enclosed building; and provided further, that tire rebuilding or battery manufacturing shall not be permitted
Automobile upholstery shops	
Awning or canvas shops	
Baseball, football and other sports stadiums or activities	
Bed and breakfast homes, in a lawfully existing single-family dwelling	Subject to the restrictions and standards of section 19.64.030 of this code
Buildings and premises used, owned or operated by government agencies, including community centers	
Catering establishments	
Communication equipment, antenna or towers	
Day care facilities	
Drive-in restaurants	
Eating and drinking establishments	
Education, specialized	
Educational institutions	
Entertainment establishments	
Farmers markets	
General merchandising	
General office	
Ice cream and milk manufacturing plants	
Libraries	
Marinas	
Multifamily dwellings, duplexes, and bungalow courts	

Museums	
New and used car lots	Provided all repair and maintenance is conducted wholly within a completely enclosed building
Nursing and convalescent homes	
Nurseries (flower or plants)	Provided, that all incidental equipment and supplies, including fertilizers and empty cans, are kept within enclosed buildings
Parking structures or lots, which may include solar energy facilities that are installed on overhead canopies or structures, and may provide power to other lots	
Personal and business services	
Pet shops and boarding facilities	
Recycling collection center	Conducted wholly within a completely enclosed building or within an area enclosed on all sides by a solid fence or wall at least six feet in height; and provided, that no goods, materials, or objects shall be stacked higher than the fence or walls so erected
Redemption center	
Religious, benevolent, or philanthropic societies, civil organizations, and quasi-public uses	
Sanitariums	
Sign-painting shops	Conducted wholly within a completely enclosed building
Swap meet or open air market	
Taxicab, car rental, and U-drive stations and offices	
Transient vacation rentals	Not exceeding twenty bedrooms; except on Molokai, where a special use permit shall be required
Other similar businesses or commercial enterprises or activities that are not detrimental to the welfare of the surrounding area	Provided that such uses shall be approved by the appropriate planning commission as conforming to the intent of this article

(Ord. No. 4088, § 7, 2013)

19.18.030 Accessory uses.

The following uses, located on the same lot, are deemed accessory, customary, incidental, usual, and necessary to the permitted uses in the B-2 community business district.

Accessory uses	Criteria or limitations
Energy systems, small-scale	Provided there will be no detrimental or nuisance effect upon neighbors
Warehouses and yards	Conducted wholly within a completely enclosed building or within an area enclosed on all sides by a solid fence or wall at least six feet in height; and provided, that no goods, materials, or objects shall be stacked higher than the fence or walls so erected
One or more dwelling units	Located above or below the first floor of a permitted use
Other uses that are determined by the director of planning to be clearly incidental and customary to a permitted use	

(Ord. No. 4088, § 7, 2013)

19.18.040 - Special uses.

The following are special uses in the B-2 community business district, and approval of the appropriate planning commission shall be obtained, upon conformance with the intent of this article and subject to such terms and conditions as may be warranted and required:

Special uses	Criteria or limitations
Mortuaries	
Transient vacation rentals	Twenty-one to fifty bedrooms; except on Molokai, where the maximum number of bedrooms and use shall be determined by the planning commission
Other uses that are similar in character to permitted and special uses and that are not detrimental to the welfare of the surrounding area	

(Ord. No. 4088, § 7, 2013)

19.18.050 - Development standards.

The development standards in the B-2 community business district shall be as follows:

	B-2	Notes and exceptions
Minimum lot area (square feet)	6,000	
Minimum lot width (in feet)	60	
Maximum building height (in feet)	90	Except that vent pipes, fans, chimneys, antennae, and equipment used for small-scale energy systems on roofs shall not exceed one hundred feet
Floor area ratio	200%	
Minimum yard setback (in feet)		
Front	None	
Side and rear	0 or the same as the adjoining zoning category whichever is greater	
Maximum height and minimum setback for free-standing antennae or wind turbine structures	Maximum height of 50 feet; minimum setback of 1 foot for each foot in height, from all property lines	
Accessory structures within setback area	Mail boxes, trash enclosures, boundary walls, and ground signs	

(Ord. No. 4088, § 7, 2013)

19.18.060 - Rule making authority.

The director of planning may adopt rules to implement this chapter.

(Ord. No. 4088, § 7, 2013)

Chapter 19.16 - B-1 NEIGHBORHOOD BUSINESS DISTRICT
Sections:

19.16.010 - Generally.

A neighborhood business district is one wherein retail businesses or service establishments supply commodities or perform services to meet the daily needs of the neighborhood.

(Prior code § 8-1.8(a))

19.16.020 - Permitted uses.

Within the B-1 district, the following uses shall be permitted:

A. Barber or beauty shops;

B. Baker goods stores;

C. Book, stationery, or gift stores;

D. Candy stores;

E. Churches;

F. Day care centers and nurseries;

G. Delicatessen stores;

H. Drugstores;

I. Florist shops;

J. Grocery stores and meat markets;

K. Ice cream or snack counters;

L. Laundromats;

M. Liquor stores (package only);

N. Gasoline retailing; provided that, it is owned and operated as an adjunct to a neighborhood store; and further provided that, no servicing, repairing, storing, washing, or maintenance of vehicles will be permitted on the premises;

O. Other similar retail businesses or service establishments that supply commodities or perform services primarily for residents of the surrounding neighborhood; provided that, such uses shall be approved by the commission as conforming to the intent of this title;

P. One single-family dwelling per lot; provided that, the lot is sufficiently large to provide a lot area six thousand square feet for the dwelling after the area for the business, parking, and other accessory areas for the business have been subtracted; or living and sleeping quarters for a single family constructed above the ground floor of the business building;

Q. Bed and breakfast homes, subject to the provisions of chapter 19.64 of this title;

R. Home occupations in single-family dwellings permitted pursuant to subsection P; and

S. Short-term rental homes, subject to the provisions of chapter 19.65 of this title.

(Ord. No. 3941, § 7, 2012; Ord. No. 3622, § 5, 2009; Ord. 2609 § 5, 1997: prior code § 8-1.8(b))

19.16.030 - Required conditions.

A. All business, services, or processing shall be conducted wholly within completely enclosed buildings, except for day care centers, nurseries, automobile parking, and/or off-street loading.

B. All goods produced on the premises, whether primary or incidental, shall be sold at retail and only on the premises where produced.

(Prior code § 8-1.8(c))

19.16.040 - Area regulations.

The minimum lot area shall be six thousand square feet and the minimum lot frontage shall be sixty feet.

(Prior code § 8-1.8(d))

19.16.050 - Height regulations.

No building shall exceed two stories and thirty feet in height.

(Prior code § 8-1.8(e))

19.16.060 - Yards.

There shall be a front yard of fifteen feet, side yard of six feet, and a rear yard of six feet; except that for any two-story building, a side yard of ten feet, and a rear yard of ten feet shall be required. (Prior code § 8-1.8(f))

ADDENDA

DEFINITIONS

The purpose of this Glossary is to assist the reader in understanding specific terminology used in this report.

Appraisal (noun) the act or process of developing an opinion of value; an opinion of value (adjective) of or pertaining to appraising and related functions such as appraisal practice or appraisal services.

Cash Equivalent A price expressed in terms of cash, as distinguished from a price expressed totally or partly in terms of the face amounts of notes or other securities that cannot be sold at their face amounts.

Counseling Providing competent, disinterested, and unbiased advice and guidance on diverse problems in the broad field of real estate; may involve any or all aspects of the business such as merchandising, leasing, management, acquisition/disposition planning, financing, development, cost-benefit studies, feasibility analysis, and similar services. Counseling services are often associated with evaluation, but they are beyond the scope of appraisal.

Discounting A procedure used to convert periodic incomes, cash flows, and reversions into present value; based on the assumption that benefits received in the future are worth less than the same benefits received now.

Extraordinary Assumption An assumption, directly related to a specific assignment, as of the effective date of the assignment results, which, if found to be false, could alter the appraiser's opinions or conclusions.

Extraordinary assumptions presume as fact otherwise uncertain information about physical, legal, or economic characteristics of the subject property; or about conditions external to the property such as market conditions or trends; or about the integrity of data used in an analysis. An extraordinary assumption may be used in an assignment only if:

- It is required to properly develop credible opinions and conclusions;
- The appraiser has a reasonable basis for the extraordinary assumption;
- Use of the extraordinary assumption results in a credible analysis; and
- The appraiser complies with the disclosure requirements set forth in USPAP for extraordinary assumptions.

Fair Value The cash price that might reasonably be anticipated in a current sale under all conditions requisite to a fair sale. A fair sale means that buyer and seller are each acting prudently, knowledgeably, and under no necessity to buy or sell-, i.e., other than in a forced or liquidation sale. The appraiser should estimate the cash price that might be received upon exposure to the open market for a reasonable time, considering the property type and local market conditions. ***When a current sale is unlikely-i.e., when it is unlikely that the sale can be completed within 12 months-the appraiser must discount all cash flows generated by the property to obtain the estimate of fair value.*** These cash flows include, but are not limited to, those arising from ownership, development, operating, and sale of the

property. The discount applied shall reflect the appraiser's judgment of what a prudent, knowledgeable purchase under o necessity to buy would be willing to pay to purchase the property in a current sale.

Fee Simple Estate — Absolute ownership encumbered by any other interest or estate, subject only to the limitations imposed by the governmental powers of taxation, eminent domain, police power, and escheat.

Hawaiian Terms — The Hawaiian words "mauka" and "makai" are commonly used in the islands as indicators of direction. The word "mauka" means toward the mountain, and "makai" means toward the ocean.

Highest and Best Use — The reasonably probable and legal use of vacant land or an improved property, which is physically possible, appropriately supported, financially feasible, and that results in the highest value. The four criteria the highest and best use must meet are legal permissibility, physical possibility, financial feasibility, and maximum profitability.

Highest and Best Use of Land or a Site as Though Vacant — Among all reasonable, alternative uses, the use that yields the highest present land value, after payments are made for labor, capital, and coordination. The use of a property based on the assumption that the parcel of land is vacant or can be made vacant by demolishing any improvements.

Highest and Best Use of Property as Improved — The use that should be made of a property as it exists. An existing improvement should be renovated or retained as is so long as it continues to contribute to the total market value of the property, or until the return from a new improvement would more than offset the cost of demolishing the existing building and constructing a new one.

Hypothetical Condition — A condition, directly related to a specific assignment, which is contrary to what is known by the appraiser to exist on the effective date of the assignment results, but is used for the purpose of analysis.

Hypothetical conditions are contrary to known facts about physical, legal, or economic characteristics of the subject property; or about conditions external to the property, such as market conditions or trends; or about the integrity of data used in an analysis. A hypothetical condition may be used in an assignment only if:

- Use of the hypothetical condition is clearly required for legal purposes, for purposes of reasonable analysis, or for purposes of comparison;
- Use of the hypothetical condition results in a credible analysis; and
- The appraiser complies with the disclosure requirements set forth in USPAP for hypothetical conditions

Leased Fee Interest — An ownership interest held by a landlord with the rights of use and occupancy conveyed by lease to others. The rights of the lessor (the leased fee owner) and the lessee are specified by contract terms contained within the lease.

Leasehold Interest

The interest held by the lessee (the tenant or renter) through a lease transferring the rights of use and occupancy for a stated term under certain conditions.

Market Rent

The most probable rent that a property should bring in a competitive and open market reflecting all conditions and restrictions of the specified lease agreement including term, rental adjustment and revaluation, permitted uses, use restrictions, and expense obligations; the lessee and lessor each acting prudently and knowledgeably, and assuming consummation of a lease contract as of a specified date and the passing of the leasehold from lessor to lessee under conditions whereby:

- Lessee and lessor are typically motivated.
- Both parties are well informed or well advised, and acting in what they consider their best interests.
- A reasonable time is allowed for exposure in the open market.
- The rent payment is made in terms of cash in United States dollars, and is expressed as an amount per time period consistent with the payment schedule of the lease contract.
- The rental amount represents the normal consideration for the property leased unaffected by special fees or concessions granted by anyone associated with the transaction.

Market Value

The major focus of most real property appraisal assignments. Both economic and legal definitions of market value have been developed and refined. Continual refinement is essential to the growth of the appraisal profession.

The most widely accepted components of market value are incorporated in the following definition:

"The most probable price, as of a specified date, in cash, or in terms equivalent to cash, or in other precisely revealed terms, for which the specified property rights should sell after reasonable exposure in a competitive market under all conditions requisite to a fair sale, with the buyer and seller each acting prudently, knowledgeably, and for self-interest, and assuming that neither is under undue duress."

Market value is described in the *Uniform Standards of Professional Appraisal Practice* (USPAP) as follows:

"A type of value, stated as an opinion, that presumes the transfer of a property (i.e., a right of ownership or a bundle of such rights), as of a certain date, under specific conditions set forth in the definition of the term identified by the appraiser as applicable in an appraisal."

The following definition of market value is used by agencies that regulate federally insured financial institutions in the United States:

"The most probable price that a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently and knowledgeably, and assuming the price is not affected by undue stimulus. Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:"

- Buyer and seller are typically motivated;

- Both parties are well informed or well advised, and acting in what they consider their best interests;
- A reasonable time is allowed for exposure in the open market;
- Payment is made in terms of cash in U.S. dollars or in terms of financial arrangements comparable thereto; and
- The price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale.

Prospective Market Value Upon Completion of Construction The prospective future value of a property on the date that construction is completed, based upon market conditions forecast to exist as of the completion date.

Prospective Value Opinion A forecast of the value expected at a specified future date. A prospective value opinion is most frequently sought in connection with real estate projects that are proposed, under construction, or under conversion to a new use, or those that have not achieved sellout or a stabilized level of long-term occupancy at the time the appraisal report is written.

Report Any communication, written or oral, of an appraisal, appraisal review, or appraisal consulting service that is transmitted to the client upon completion of an assignment. The types of written reports listed below apply to real property appraisals:

Appraisal Report: A written appraisal report prepared under Standards Rule 2-2(a) of the *Uniform Standards of Professional Appraisal Practice*. An appraisal report sets forth the data considered, the appraisal procedures followed, and the reasoning employed in the appraisal, addressing each item in the depth and detail required by its significance to the appraisal and providing sufficient information so that the client and the intended users of the report will understand the appraisal and not be misled or confused.

Restricted Appraisal Report: A written report prepared under Standards Rule 2-2(b) of the *Uniform Standards of Professional Appraisal Practice*. A restricted appraisal report is for client use only. The restricted appraisal report should contain a brief statement of information significant to the solution of the appraisal problem. It should be understood that the rationale for how the appraiser arrived at the opinions and conclusions in the report may not be understood properly without additional information in the appraiser's work file.

Uniform Standards of Professional Appraisal Practice Current standards of the appraisal profession, developed for appraisers and the users of appraisal services by the Appraisal Standards Board of The Appraisal Foundation. The Uniform Standards set forth the procedures to be followed in developing an appraisal, analysis, or opinion and the manner in which an appraisal, analysis, or opinion is communicated. They are endorsed by the Appraisal Institute and by other professional appraisal organizations.

LIMITING AND CONTINGENT CONDITIONS
ACM Consultants, Inc.

1. No responsibility is assumed for matters legal in character or nature. No opinion is rendered as to title, which is assumed to be good and marketable. All existing liens, encumbrances, and assessments have been disregarded, unless otherwise noted, and the property is appraised as though free and clear, having responsible ownership and competent management.

2. Legal descriptions referenced in the report were obtained from public documents from the State of Hawaii, Bureau of Conveyances, or were furnished by the client, and were assumed to be correct.

3. It is assumed that all applicable zoning and use regulations and restrictions have been complied with, unless a nonconformity has been stated, defined, and considered in this appraisal report.

4. It is assumed that all required licenses, certificates of occupancy or other legislative or administrative authority from any local, state, or national governmental or private entity or organization have been or can be obtained or renewed for any use on which the value estimates contained in this report are based.

5. It is assumed that the utilization of the land and improvements is within the boundaries or property lines of the property described and that there is no encroachment or trespass unless otherwise stated in this report. Responsible ownership and competent property management are assumed unless otherwise stated in this report.

6. The Appraiser has viewed, as far as possible, the land and the improvements; however, it was not possible to personally observe conditions beneath the soil or hidden structurally or by other components. The appraisal assumes that there are no hidden, unapparent, or apparent conditions of the property site, subsoil, or structures or toxic material which would render it more or less valuable. The Appraiser will not be responsible for any such conditions that do exist or for any engineering or testing that might be required to discover whether such conditions exist.

7. The appraiser is not qualified to detect hazardous waste and/or toxic materials. Any comment by the appraiser that might suggest the possibility of the presence of such substances should not be taken as confirmation of the presence of hazardous waste and/or toxic materials. Such determination would require investigation by a qualified expert in the field of environmental assessment. The presence of substances such as asbestos, urea-formaldehyde foam insulation, or other potentially hazardous materials may affect the value of the property. The appraiser's value estimate is predicated on the assumption that there is no such material on or in the property that would cause a loss in value unless otherwise stated in this report. No responsibility is assumed for any environmental conditions, or for any expertise or engineering knowledge required to discover them. The appraiser's descriptions and resulting comments are the result of the routine observations made during the appraisal process.

8. All engineering is assumed to be correct. Any plot plans and illustrative material in this report are included only to assist the reader in visualizing the property. Any sketch in this report may show approximate dimensions and is included to assist the reader in visualizing the property. Maps and exhibits found in this report are provided for reader reference purposes only. No guarantee as to accuracy is expressed or implied unless otherwise stated in this report. No survey has been made for the purpose of this report.

9. Information provided by third parties including government agencies, financial institutions, realtors, buyers, sellers, property owners and others and contained in this report were obtained from sources considered reliable and believed to be true and correct. However, no warranty is assumed for possible misinformation.

10. If analyses contained in this appraisal involve partial interests in real estate, the value of the fractional interest plus the value of all other fractional interests may or may not equal the value of the entire fee simple estate considered as a whole.

11. Unless otherwise stated in this report, the subject property is appraised without a specific compliance survey having been conducted to determine if the property is or is not in conformance with the requirements of the Americans with Disabilities Act. The presence of architectural and communications barriers that are structural in nature that would restrict access by disabled individuals may adversely affect the property's value, marketability, or utility.

12. Possession of this report, or a copy thereof, does not carry with it the right of publication. It may not be used for any purpose by any person other than the party to whom it is addressed without the written consent of the appraiser, and in any event, only with proper written qualification and only in its entirety.

13. The Appraiser(s) or those assisting in preparation of the report will not be asked or required to give testimony in court or hearing because of having made the appraisal, in full or in part, nor engage in post appraisal consultation with client or third parties except under separate and special arrangement and at additional fee. If testimony or deposition is required because of subpoena, the client shall be responsible for any additional time, fees, and charges regardless of issuing party.

14. Neither all nor any part of the contents of this report (especially any conclusions as to value, the identity of the appraiser, or the firm with which the appraiser is connected) shall be disseminated to the public through advertising, public relations, news sales, or other media without prior written consent and approval of the appraiser.

15. The appraiser will not disclose the contents of this appraisal report except as provided for in the *Uniform Standards of Professional Appraisal Practice*, and/or applicable federal, state or local laws.

ACCEPTANCE OF, AND/OR USE OF THIS APPRAISAL REPORT BY CLIENT OR ANY THIRD PARTY CONSTITUTES ACCEPTANCE OF THE ACM CONSULTANTS, INC., CERTIFICATION, LIMITING AND CONTINGENT CONDITIONS. APPRAISER LIABILITY EXTENDS ONLY TO STATED CLIENT, NOT SUBSEQUENT PARTIES OR USERS OF ANY TYPE; and the total liability of Appraiser(s) and firm is limited to the amount of fee received by Appraiser.

PROFESSIONAL QUALIFICATIONS

Shane M. Fukuda, MAI

STATE LICENSING

State Certified General Appraiser
State of Hawaii, License No. CGA-810, July 1, 2007
Expiration: December 31, 2019

PROFESSIONAL AFFILIATIONS

Member – Appraisal Institute, MAI Designation
Affiliate Member – National Association of Realtors, Hawaii Association of Realtors, Realtors Association of Maui

EMPLOYMENT

Fukuda Valuation & Consulting LLC
January 2017 to Present
Managing Member

ACM Consultants, Inc.
November 2009 to December 2016
Vice President – Commercial Division
July 2007 to October 2009
Staff Appraiser
October 2004 to June 2007
Appraiser Assistant; Appraiser Trainee

GENERAL EDUCATION

Maui Community College, 1989-1991
Henry Perrine Baldwin High School, 1989

APPRAISAL EDUCATION

Appraisal Institute

Course	*Valuation of Conservation Easements* Honolulu, Hawaii – September 2018
Seminar	*Litigation Assignments for Residential Appraisers: Doing Expert Work on Atypical Cases* Honolulu, Hawaii – September 2017
Seminar	*Advanced Land Valuation: Sound Solutions to Perplexing Problems* Honolulu, Hawaii – September 2017
Seminar	*Analyzing Tenant Credit Risk and Commercial Lease Analysis* Honolulu, Hawaii – October 2016
Seminar	*Historic Lands* Wailuku, Hawaii – July 2016
Course	*7 Hour National USPAP Equivalent* Honolulu, Hawaii – April 2016
Course	*7 Hour National USPAP Equivalent* Online Course – November 2015

Course	*Supervisory Appraiser/Trainee Appraiser* Honolulu, Hawaii – May 2015
Seminar	*General Demonstration Report Writing* Online Seminar – July 2014
Course 503GD	*Advanced Concepts & Case Studies* Las Vegas, Nevada – April 2014
Course S500GD	*Advanced Market Analysis and Highest & Best Use* Synchronous Online Course– December 2013
Course	*7 Hour National USPAP Equivalent* Online Course – December 2013
Course 844	*Residential & Commercial Valuation of Solar* Honolulu, Hawaii – November 2013
Course 405G	*General Appraiser Report Writing and Case Studies* Online Course – August 2012
Course	*7 Hour National USPAP Equivalent* Online Course – December 2011
Course 501GD	*Advanced Income Capitalization* San Diego, California – June 2011
Seminar	*Hotel Valuation* Honolulu, Hawaii – February 2010
Seminar	*Subdivision Valuation* Online Seminar – December 2009
Seminar	*Business Practices and Ethics* Online Seminar – December 2009
Seminar	*Small Hotel/Motel Valuation* Online Seminar – December 2009
Course	*7 Hour National USPAP Equivalent* Online Course – December 2009
Seminar	*Hawaii Lands, Historical Review* Kahului, Hawaii – September 2009
Course 320	*General Applications* San Diego, California – July 2006
Course 310	*Basic Income Capitalization* San Diego, California – July 2006
Course 101	*Basic Appraisal Procedures* Denver, Colorado – April 2005
Course 100	*Basic Appraisal Principles* Denver, Colorado – April 2005

Lincoln Graduate Center

Course 405	*Residential Sales Comparison & Income Approaches* Honolulu, Hawaii – November 2006
Course 404	*Residential Appraiser Site Valuation & Cost Approach* Honolulu, Hawaii – November 2006

Course 403	*Residential Market Analysis & Highest & Best Use* Honolulu, Hawaii – November 2006
Course 772	*National USPAP Course* Honolulu, Hawaii – October 2006
Course 772	*National USPAP Course* Honolulu, Hawaii – January 2005

MISCELLANEOUS EDUCATION

CoreLogic- Marshall & Swift

Course	*Commercial Cost Approach Certification* Dallas, Texas – October 2017

REALM Business Solutions

Course	*Argus 12.0* Honolulu, Hawaii – July 2005

APPENDIX

B

SUSTAINABILITY REPORT

Sustainability Report

DLNR INDUSTRIAL AND BUSINESS PARK
(TMK (2)3-8-008:001 (por.))

Prepared for:

State of Hawai'i
Department of Land and Natural Resources

April 2018

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MUNEKIYO HIRAGA

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INTRODUCTION

I. INTRODUCTION

A. PROJECT LOCATION

The Department of Land and Natural Resources (DLNR) is proposing the development of the DLNR Industrial and Business Park in the vicinity of the Old Pu'unēnē Airport, approximately five (5) miles south of Kahului. The subject property is located at Pulehunui (also referred to as Pu'unēnē) on lands identified by Tax Map Key (TMK) (2)3-8-008:001(por.). See **Figure 1**. The total combined acreage encompassing the project planning limits is approximately 280 acres.

Access to the property is provided via Maui Veterans Highway (formerly Mokulele Highway), a State highway facility having two (2) travel lanes in both the northbound and southbound directions. At the northern extent of the property, access is provided via a signalized intersection of Maui Veterans Highway and Kama'āina Road. At the southern extent of the property, along Maui Veterans Highway, a separate access road to the property is provided at the Mehameha Loop intersection. See **Figure 2**.

The majority of lands underlying the project area were utilized until recently by Alexander & Baldwin's Hawaiian Commercial and Sugar Company (HC&S) subsidiary for sugar cane cultivation. At the end of 2016, HC&S ceased sugar cane operations, with its last crops harvested in December 2016.

Lands immediately surrounding the project site are under the ownership/management of Alexander & Baldwin, DLNR, and the Department of Hawaiian Home Lands (DHHL).

B. PROJECT DESCRIPTION

The DLNR proposes light industrial, commercial, and public/quasi-public uses at the DLNR Industrial and Business Park, including the provision of required infrastructure systems. Key components of the plan include development of small, medium, and large lots for light industrial, commercial, government, and nonprofit uses to meet varying needs of future lessees. Lots within the proposed project will be leased to tenants to generate revenue to support DLNR's programs. While market demand and tenant interest will dictate the actual uses, it is anticipated that the majority of the lands will be utilized for light industrial use, with limited commercial use. For the purposes of the analysis conducted for this Environmental Impact Statement (EIS), it is assumed that up to 30 percent of the leasable land will be utilized for commercial use, with the remaining land utilized for light industrial use and/or government use.

DLNR Industrial and Business Park covers an area of approximately 280 acres. Small lots of less than 1.0 acre front Kama'āina Road and the interior roadway from Kama'āina Road. Mid-sized lots between one (1) acre and less than three (3) acres and larger lots

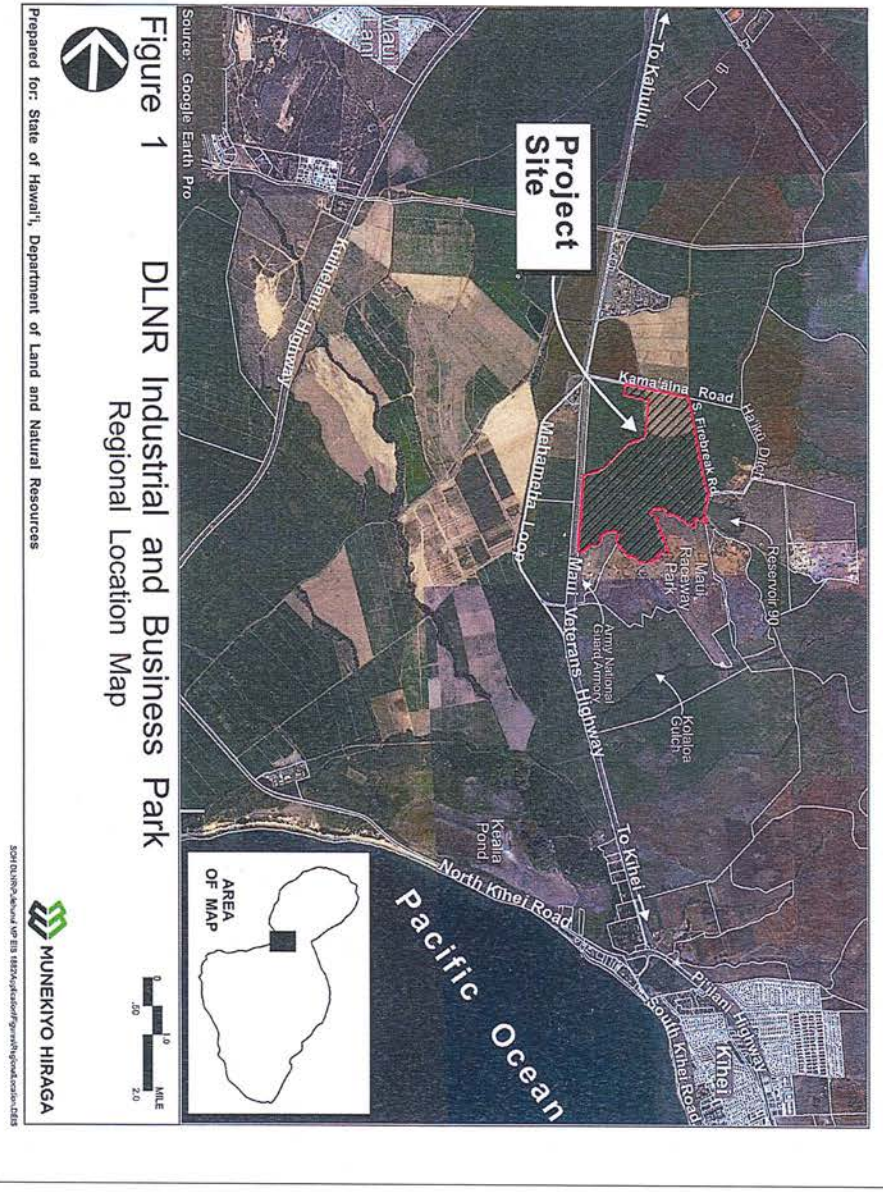
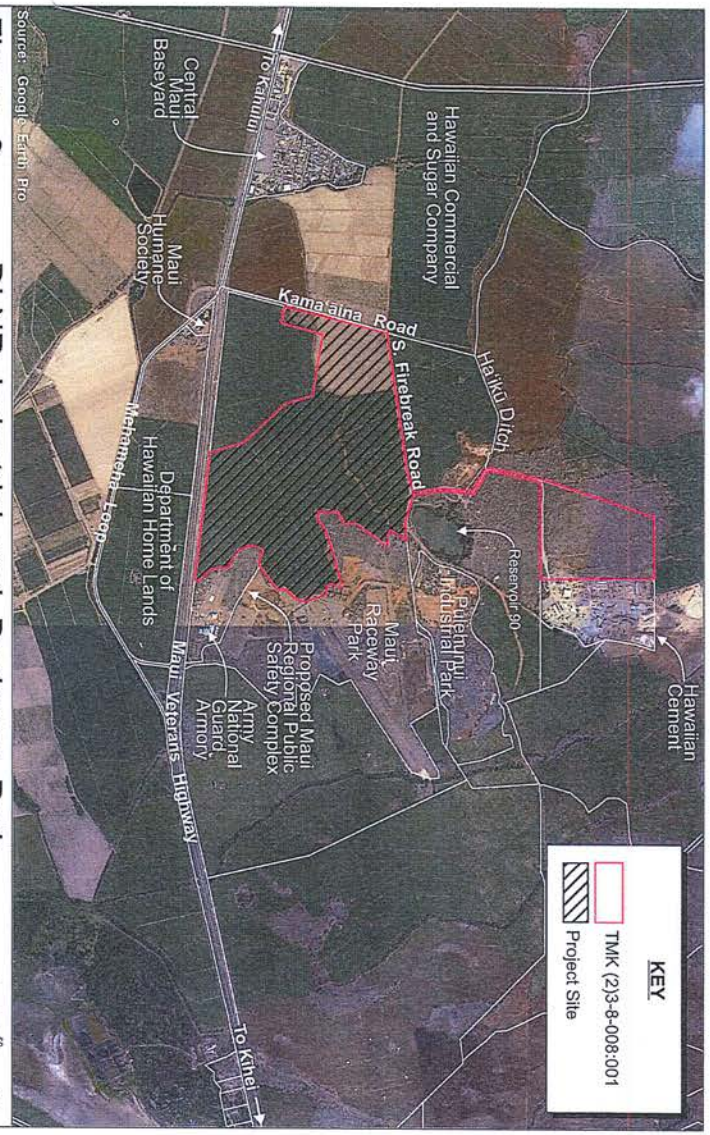


Figure 1 DLNR Industrial and Business Park
Regional Location Map



Source: Google Earth Pro

Figure 2

DLNR Industrial and Business Park

Property Location Map

Prepared for: State of Hawai'i, Department of Land and Natural Resources

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between three (3) acres and up to five (5) acres are proposed within the interior portions of the plan area. The site plan encompasses an approximate 20-acre site for the proposed Division of Forestry and Wildlife (DOFAW) administrative facilities and baseyard in the northeastern portion of the DLNR Industrial and Business Park plan area. The 20-acre site would allow DOFAW to relocate its operations from its existing 3.0-acre baseyard facility in Kahului, which has limited potential for expansion. See **Figure 3**. Although the conceptual plan proposes an interior subdivision of the lands, the plan would also allow larger or smaller lots to be provided to potential lessees in order to meet their specific land requirements. This conceptual layout will provide DLNR some flexibility to meet the lot size requirements specified by future lessees.

Internal roadway networks, as well as bicycle, open space and drainage networks, will be developed as part of the DLNR Industrial and Business Park. The project area will be accessed via a proposed signalized intersection off of Maui Veterans Highway, the existing Kama'āina Road, South Firebreak Road, and the County of Maui's Raceway Park access road, which connects to Maui Veterans Highway at its intersection with Mehameha Loop. Water, wastewater, and drainage infrastructure will also be provided to service the proposed project. A 100-foot buffer along Maui Veterans Highway and landscaping throughout the project are proposed to provide visual relief.

C. PROJECT PURPOSE AND NEED

The DLNR Industrial and Business Park is an opportunity to optimize the use of State lands to generate economic development and job opportunities for Maui residents in an area identified for future growth and meet the demand for light industrial space. The proposed project is located within the Maui Island Plan's (MIP) Urban Growth Boundary. The Pulehunui area is identified in the MIP as a logical site, due to its location midway between Kahului and Kīhei, for expansion of the island's industrial land use needs.

In addition to the economic development opportunities presented by the proposed project, DLNR Industrial and Business Park will provide a long-term revenue stream to support a wide range of DLNR programs. The DLNR is responsible for managing approximately 1.3 million acres of public lands, including sensitive natural, cultural, and recreational resource areas. DLNR also performs public safety duties (e.g., flood and rockfall prevention), issues and manages leases of public lands (agricultural, pasture, commercial, industrial, and resort leases), maintains unencumbered public lands, and enforces the Department's rules and regulations. The implementation of the proposed project would generate ongoing lease revenue for the DLNR to support operations and management of public lands and programs. The proposed DLNR Industrial and Business Park provides one option for shifting the funding sources for the foregoing programs from the tax paying public to a business model based revenue source.

D. REPORT PURPOSE

This report is being prepared to discuss opportunities for incorporating sustainable development and operating practices into the proposed project. The basic approach to sustainability is to be less resource-consumptive, fulfill and advance Federal, State, and County policies and best practices associated with sustainable development, and utilize new techniques and technologies that are both market relevant and fiscally responsible. The proposed techniques discussed herein present an adaptable guide for the development and operation of the DLNR Industrial and Business Park as a whole and individual lots within it.



Source: Hawaii Land Design

Figure 3

DLNR Industrial and Business Park

Conceptual Site Plan

NOT TO SCALE

Prepared for: State of Hawai'i, Department of Land and Natural Resources

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DEFINITION OF SUSTAINABILITY AND GUIDING DOCUMENTS

II

II. DEFINITION OF SUSTAINABILITY AND GUIDING DOCUMENTS

A. ACT 181, SESSION LAWS OF HAWAI'I 2011

As it stands, Hawai'i faces many critical issues including the steady deterioration of public infrastructure, the lack of affordable housing, a continued reliance on a service-based economy, the vulnerability of Hawai'i in a volatile global energy market, possible interruptions in travel and to critical food supplies, threats to fragile island ecosystems, ever-increasing numbers of residents, and an increasing number of visitors over the long term. In order to address these concerns, policy framework and guidelines have been established to ensure the long-range vision for a sustainable Hawai'i is met.

Pursuant to Act 181, Session Laws of Hawai'i 2011, 'Sustainability' is defined as:

(1) *Respect of the culture, character, beauty, and history of the State's island communities;*

(2) *Striking a balance between economic, social, community, and environmental priorities; and*

(3) *Meeting the needs of the present without compromising the ability of future generations to meet their own needs.*

Chapter 226, Hawai'i Revised Statutes (HRS) was amended with an addition to Part III of principles and priority guidelines that promote sustainability by:

(1) *Encouraging balanced economic, social, community, and environmental priorities;*

(2) *Encouraging planning that respects and promotes living within the natural resources and limits of the State;*

(3) *Promoting a diversified and dynamic economy;*

(4) *Encouraging respect for the host culture;*

(5) *Promoting decisions based on meeting the needs of the present without compromising the needs of future generations;*

(6) *Considering the principles of the ahupuaa system; and*

(7) *Emphasizing that everyone, including individuals, families, communities, businesses, and government, has the responsibility for achieving a sustainable Hawaii.*

The proposed project will result in income generation not only for the State of Hawai'i's Department of Land and Natural Resources (DLNR), but also for Hawai'i's residents who will find employment opportunities at the DLNR Industrial and Business Park. The income generated for DLNR will also be a source of funding for future conservation efforts and programs that will provide the balance between environmental and economic priorities. Proposed actions include honoring the cultural significance of the project location as well as maintaining the balance between the natural scenic environment of the area and the economic needs of the surrounding communities.

B. HAWAI'I 2050 SUSTAINABILITY PLAN

In 2005, the Hawai'i State Legislature determined that the State of Hawai'i should be responsible not only for resolving current public needs, but should provide guidance to assure that the preferred vision and goals for our future are met. Recognizing that the present generation must address sustainability issues essential to maintaining Hawai'i's quality of life for future generations, the State Legislature enacted Act 8 in 2005, which provided for the development of a Sustainability Plan to address the vital needs of Hawai'i through the year 2050. Act 8 also established the Hawai'i 2050 Sustainability Task Force to review the Hawai'i State Plan and the State's comprehensive planning system and promulgated the creation of the Hawai'i 2050 Sustainability Plan (Hawai'i 2050). Hawai'i 2050 has as its main tenants a respect for culture, character, beauty, and history of the state's island communities; balance among economic, community, and environmental priorities; and an effort to meet the needs of the present without compromising the ability of future generations to meet their own needs. Hawai'i 2050 defines five (5) goals intended to lead toward a sustainable future for Hawai'i. These goals are accompanied by specific strategic actions for implementation and indicators to measure the success or failure of these actions over time. **Table 1** provides an evaluation and summary of the project's compatibility with applicable goals of the Hawai'i 2050 Sustainability Plan.

Table 1. Hawai'i 2050 Sustainability Plan

HAWAI'I 2050 SUSTAINABILITY PLAN (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	S	N/S	N/A
The State's first definition of sustainability: A Hawai'i that achieves the balance to: (A) Protects the culture, character, beauty and history of our state's island communities (B) Strikes a balance among economic, social and community, and environmental priorities (C) Meets the needs of the present without compromising the ability of future generations to meet their own needs			
Goal 1: Living sustainably is part of our daily practice in Hawai'i.			✓
Develop a sustainability ethic.			✓
Integrate sustainability principles and practices into public and private school curricula.			✓
Develop a statewide marketing and public awareness campaign on sustainability principles and practices.			✓
Conduct ongoing forums and cross-sector dialogue to promote collaboration and progress on achieving Hawai'i's sustainability goals.			✓
Continually monitor trends and conditions in Hawai'i's economy, society and natural systems.			✓
Analysis: **Goal 1 is not applicable to the proposed project.**			
Goal 2: **Our diversified and globally competitive economy enables us to meaningfully live, work and play in Hawai'i.**			
Develop a more diverse and resilient economy.	✓		
Provide incentives that foster sustainability-related industries, which include, but aren't limited to renewable energy, innovation and science-based industries, and environmental technologies.			✓
Increase production and consumption of local foods and products, particularly agricultural products.			✓
Increase commercialization and technology transfer between post-secondary institutions and the business sector.			✓
Support the building blocks for economic stability and sustainability.	✓		
Recognize and support established industries such as the visitor industry, military, construction, and agriculture as strong components of the Hawai'i economy.	✓		
Provide incentives for industries to operate in more sustainable ways.			✓
Attract local and outside capital and investments in Hawai'i's economic activities.			✓
Reduce regulations and lower the cost of running a business.			✓
Increase the competitiveness of Hawai'i's workforce.			✓
Invest in and improve our public education system to provide for a skilled workforce.			✓
Create incentives and opportunities for workforce skills upgrade training programs, including the availability of remedial education programs.			✓
Increase student enrollment in post-secondary educational programs.			✓
Adopt living wage guidelines and measurements.			✓
Identify, prioritize and fund infrastructure "crisis points" that need fixing.			✓
Analysis: **The proposed project will support the construction industry through the creation of jobs and encouragement of construction-related spending. Lots within the DLNR Industrial and Business Park will support existing and future businesses in various industries vital to Maui's economy, thus creating an environment of sustained employment.**			
Goal 3: **Our natural resources are responsibly and respectfully used, replenished and preserved for future generations.**			
Reduce reliance on fossil (carbon-based) fuels.	✓		
Expand renewable energy opportunities.	✓		
Increase energy efficiency in private and public buildings, including retrofitting existing buildings.	✓		
Improve energy efficiencies and options in transportation.			✓
Encourage the production and use of locally produced bio-fuels.			✓

HAWAI'I 2050 SUSTAINABILITY PLAN (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	S	N/S	N/A
Adopt building codes that encourage "green building" technology.			✓
Encourage all government agencies to adopt sustainable practices, including purchasing hybrid cars, buying biodegradable products, and mandating recycling.			✓
Conserve water and ensure adequate water supply.	✓		
Reduce water consumption by means of education and incentives.			✓
Encourage greater production and use of recycled water.	✓		
Continually review water-conserving technologies for possible incorporation in county building codes.			✓
Encourage price structures for water use that furthers conservation.			✓
Require water conservation plans from large private users.			✓
Increase recycling, reuse and waste reduction strategies.	✓		
Provide greater protection for air, and land-, fresh water- and ocean-based habitats.	✓		
Strengthen enforcement of habitat management.			✓
Fund public and private conservation education.			✓
Improvement management of protected watershed areas.	✓		
Incorporate the values and philosophy of the ahupua'a resource management system as appropriate.			✓
Establish funding for invasive species control and native ecosystems protection.	✓		
Conserve agricultural, open space and conservation lands and resources.			✓
Create compact patterns of urban development.	✓		
Encourage "smart growth" concepts in land use and community planning.	✓		
Research and strengthen management initiatives to respond to rising sea levels, coastal hazards, erosion and other natural hazards.			✓
Develop a comprehensive environmental mapping and measurement system to evaluate the overall health and status of Hawai'i's natural ecosystems.			✓
Analysis: **The DLNR will encourage tenants to utilize renewable energy, such as solar, as well as low flow, water fixtures, recycled water, if available, for landscaping, and recycling and waste management practices when practicable. The project's site plan has been designed to include pedestrian and bicycle linkages and open space areas. Revenues generated through leases at the project will support DLNR's various programs including conservation efforts.**			
Goal 4: Our community is strong, healthy, vibrant and nurturing, providing safety nets for those in need.			
Strengthen social safety nets.			✓
Increase affordable housing opportunities for households up to 140% of median income.			✓
Ensure access to affordable health care for all residents.			✓
Reduce crime and violence.			✓
Provide access to elderly housing, care-giving and other long-term care services.			✓

HAWAI'I 2050 SUSTAINABILITY PLAN (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	S	N/S	N/A
Invest in greater prevention and treatment of those suffering from substance abuse and mental illness.			✓
Increase awareness of and competency in financial literacy and asset building.			✓
Strengthen the nonprofit sector, philanthropy and volunteerism.			✓
Ensure that persons with disabilities are afforded equal opportunity to participate and excel in all aspects of community life.			✓
Provide after-school and extra-curricular programs to enable Hawai'i's youth to broaden their life experiences.			✓
Improve public transportation infrastructure and alternatives.	✓		
Increase access to public transportation.			✓
Reduce traffic congestion.			✓
Encourage and provide incentives for telecommuting.			✓
Increase and improve bicycle and pedestrian facilities, including multi-use pathways.	✓		
Strengthen public education.			✓
Support parenting, educational and financial literacy initiatives that span early childhood through lifelong learning.			✓
Increase high school graduation rates.			✓
Strengthen career pathways for technical and trade schools that enhance Hawaii's workforce.			✓
Support post-secondary and distance learning programs that broaden personal and professional learning opportunities.			✓
Provide access to diverse recreational facilities and opportunities.			
Analysis: **The proposed project will include sidewalks, street trees, open space, and bicycle paths connecting to the existing path along Maui Veterans Highway.**			
Goal 5: Our Kanaka Maoli and island cultures and values are thriving and perpetuated.			
Honor Kanaka Maoli culture and heritage.	✓		
Ensure the existence of and support for public and private entities that further the betterment of Kanaka Maoli.			✓
Increase fluency in Kanaka Maoli language. It is one of the official languages of Hawai'i.			✓
Sponsor cross-sector dialogue on Kanaka Maoli culture and island values.			✓
Protect Kanaka Maoli intellectual property and related traditional knowledge.			✓
Provide Kanaka Maoli cultural education for residents, visitors and the general public.			✓
Celebrate our cultural diversity and island way of life.			✓
Identify and protect the places, features and sacred spaces that give Hawai'i its unique character and cultural significance.			✓
Increase the number of educators who teach cultural and historic education.			✓
Enable Kanaka Maoli and others to pursue traditional Kanaka Maoli lifestyles and practices.			✓
Provide Kanaka Maoli mentors with opportunities to pass on Hawaiian culture and knowledge to the next generation of Kanaka Maoli and others. The power of wisdom comes from communication.			✓

HAWAI'I 2050 SUSTAINABILITY PLAN (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	S	N/S	N/A
Perpetuate Kanaka Maoli food production associated with land and ocean traditions and practices.			✓
Provide support for subsistence-based businesses and economies.			✓
Analysis: **Consultation has been undertaken with Native Hawaiian organizations regarding the history of the Pulehunui area. It is noted that a cultural impact assessment report was prepared for the project. The CIA did not identify any native Hawaiian cultural practices within the project area which would be adversely impacted by the proposed action.**			

C. HAWAI'I COMPLETE STREETS POLICY

State Bill (SB) No. 718 of Act 54 states that Chapter 286, HRS was amended on May 6, 2009 with the addition of a new section requiring that the State of Hawai'i Department of Transportation (DOT) and county transportation departments adopt a Complete Streets policy that seeks to reasonably accommodate convenient access and mobility for all users of public highways within their respective jurisdictions as described under Section 264-1, including pedestrians, bicyclists, transit users, motorists, and persons of all ages and abilities. It is a policy that promotes the redesign of Hawai'i's built environment to support active transportation.

In compliance with Act 54, the County of Maui passed Resolution 12-34 in 2012 as an initial step in fulfilling the requirement that the County adopt a Complete Streets policy to include pedestrian and bicycle facilities in their designs. The resolution emphasizes the need for transportation alternatives in order to increase accessibility for people with any ability, as well as promote physical activities (walking and biking) amongst individuals and families. It is noted that a complete streets policy has been drafted and reviewed by the County Public Works Commission, but has not yet been fully adopted by the County.

The proposed action includes the construction of a bike path, sidewalks, and roadways throughout the DLNR Industrial and Business Park. The bike path will also connect with the existing bike path along Maui Veterans Highway. Refer to **Figure 3**. These plans are consistent with the intent of complete streets, providing that the project site is accessible through various means other than by vehicular transport. The bike path is purposefully planned so that users are able to travel throughout the area conveniently, while the sidewalks will provide access to each lot in the project site.

1. Central Maui Pedestrian & Bicycle Master Plan for 2030

As part of the State of Hawai'i, Department of Heath's Healthy Hawai'i Initiative's (HHI) efforts to encourage walking and bicycling, the Central Maui Pedestrian & Bicycle Master Plan for 2030 ("Master Plan") aims to increase physical activity in residents' everyday lives. The Master Plan identifies opportunities to create an

environment conducive to active living through improving pedestrian and cyclist safety, mobility, and access. The availability of non-motorized transportation options is one of the Plan's main goals in order to reduce traffic congestion and improving air quality, public health, and quality of life.

The Master Plan is separated into two (2) areas: Kahului and Wailuku. Each area includes proposed pedestrian districts, bicycle districts, and pedestrian and bicycle routes. The Kahului Bicycle District includes bike lanes and a Park-n-Ride lot on Pu'unēnē Avenue, Kuihelani Highway, Dairy Road, and Ho'okele Street. Also included is a bike path connection on the south side of Maui Veterans Highway that would connect to the Park-n-Ride lot.

The proposed DLNR Industrial and Business Park project includes the construction of a bike path within the project site that connects to the existing Maui Veterans Highway bike path which runs from Kahului to Kīhei. The proposed project would provide a resting place for bicyclists traveling between Kahului and Kīhei before reaching the Master Plan's Park-n-Ride on Pu'unēnē Avenue that will allow for bike storage and parking.

D. COUNTYWIDE POLICY PLAN

The purpose of the Countywide Policy Plan is to provide broad policies and objectives which portray the desired direction of the County's future. Congruent with its core principles, the Countywide Policy Plan identifies goals, objectives, policies, and implementing actions for the following 11 pertinent functional planning categories:

1. Natural environment
2. Local cultures and traditions
3. Education
4. Social and healthcare services
5. Housing opportunities for residents
6. Local economy
7. Parks and public facilities
8. Transportation options
9. Physical infrastructure
10. Sustainable land use and growth management
11. Good governance

Embedded the Countywide Policy Plan are goals, objectives, policies, and implementing actions which advance the notion of sustainability. Specifically, ideas relating to improving the connection between urban environments and the natural landscape; use and maintenance of stormwater-treatment systems that incorporate the use of native vegetation; establishment and enforcement of urban- and rural-growth limits and directing urban and rural growth to such designated areas; supporting and encouraging the use of green building practices; and encouraging the use of trees and other forms of

landscaping along rights-of-way and within parking lots to provide shade, beauty, urban-heat reduction, and separation of pedestrians from automobile traffic are all examples of sustainability-related actions of the Countywide Policy Plan that may be incorporated into the proposed DLNR Industrial and Business Park project. The proposed project will also promote economic growth, increased employment opportunities, and provide more business destinations for surrounding communities.

E. MAUI ISLAND PLAN

The primary purpose of the Maui Island Plan (MIP) is to establish a managed and directed growth plan to accommodate population and employment growth in a manner that is fiscally prudent, safeguards the island's natural and cultural resources, enhances the built environment, and preserves land use opportunities for future generations. Chapter 2.80B, Maui County Code (MCC), requires the adoption of urban and rural growth areas for the island of Maui which will result in a more orderly and predictable development pattern. The Directed Growth Plan of the MIP uses its same goals, objectives, and policies as well as guiding land use principles as a foundation for establishing urban, small town, and rural growth boundaries.

The proposed project is located in the MIP's Urban Growth Boundary (UGB) within which urban-density development requiring a full range of services, such as new multi-user sewer and water, is supported in accordance with applicable land use laws. The purpose of the UBG is to ensure that future development occurs in an orderly fashion while also allowing in-fill and revitalization opportunities that encourage "new urbanism" and "neo-traditional design" techniques.

The MIP stated that the Pulehunui Growth Area, which includes the project site, represents a logical expansion of industrial use in the area due to its location between Kahului and Kīhei. As such, the proposed project will also promote economic growth, increased employment opportunities, and will provide more accessible business venues for the surrounding communities in an area designated for future growth. Both private and other government landowners are pursuing similar projects on lands adjacent to the DLNR Industrial and Business Park.

F. KIHEI-MAKENA COMMUNITY PLAN

The Kihei-Makena Community Plan, one (1) of nine (9) community plans for Maui County, reflects current and anticipated conditions in the Kīhei-Makena region and advances planning goals, objectives, policies, and implementation considerations to guide decision-making in the region. The Kihei-Makena Community Plan is a strategic planning document which provides specific recommendations to address the goals, objectives, and policies contained in the Maui County General Plan, while recognizing

the values and unique attributes of the Kīhei-Makena area in order to enhance the region's overall living environment.

Policy recommendations for the Kihei-Makena Community Plan region were developed to guide decision-making in a number of subject areas having community-wide impact. Many of these recommendations advance the concept of sustainability. Similar to the Countywide Policy Plan, the Kihei-Makena Community Plan encourages identifying priority growth areas to promote efficient and timely provision of infrastructure, protection, and stewardship of the natural environment, preservation of cultural and historic resources, and provision of efficient, reliable, cost effective, and environmentally sensitive facility systems, public services, and capital improvement projects. Design concepts supporting these sustainability principles will be evaluated by the DLNR for their feasibility of being incorporated into the DLNR Industrial and Business Park project. The proposed project will also promote economic growth and increased employment opportunities.

SUSTAINABILITY FRAMEWORK FOR DLNR INDUSTRIAL AND BUSINESS PARK

III

III. SUSTAINABILITY FRAMEWORK FOR DLNR INDUSTRIAL AND BUSINESS PARK

A. SUSTAINABLE DEVELOPMENT

As discussed in Chapter II, Act 181, Session Laws of Hawaii (SLH) and Hawai'i Revised Statutes (HRS), Section 226 provide priority guidelines and principles to promote sustainability, and thereby create a high quality of life and a mutually supportive balance among environmental, economic, and social equity concerns. This chapter will discuss specific sustainability practices and technologies to be evaluated for implementation in the proposed project which are in consonance with the priority guidelines and principles discussed in Act 181, SLH and HRS, §226-108.

It is noted that although the Department of Land and Natural Resources (DLNR) owns the DLNR Industrial and Business Park and will develop the backbone infrastructure for the project, the development of individual lots, with the exception of government facilities such as the proposed Division of Forestry and Wildlife Baseyard, will be undertaken by the respective lessees. As such, while there are project-wide sustainability measures that can be implemented by DLNR, implementation of other sustainability initiatives discussed below will be determined by each individual lessee and not the DLNR. The framework below includes actions which are considered to be reasonable in any development and will not present undue developmental hardships on the lessees.

B. SMART GROWTH AND LIVABILITY PRINCIPLES

The framework below was adapted from the State of Hawai'i Office of Planning's Technical Assistance Memorandum TAM-2013-1, dated December 3, 2013, which provides guidance to State and County agencies on the incorporation of sustainability considerations in the planning process for programs and land use developments. The framework provided in the memorandum was used as the basis for the development of the framework below, and was adapted to fit the unique goals and profile of the proposed project.

1. Provide More Transportation Choices

The DLNR Industrial and Business Park will provide pedestrian walkways throughout the project, as well as connectivity to the County of Maui bikeway that currently exists along the Maui Veterans Highway corridor. Refer to **Figure 3**. As studies suggest, walking and cycling have many benefits upon mental and physical health. Specific mobility strategies which may be explored for incorporation in the proposed project are listed below:

Site Design Strategies

- Organized development with interior walkability considered
- Provision of bicycle trail within project with linkages to existing trail along highway corridor
- Well shaded pedestrian linkages

2. **Enhance Economic Competitiveness**

The DLNR Industrial and Business Park will provide for economic development opportunities and job growth for Maui business and residents. Unlike many other light industrial subdivisions on Maui, the lots within the DLNR Industrial and Business Park will be offered as leasehold lots and will not be sold as fee simple lots. The leasehold structure may make the lots more affordable when compared to comparable fee-simple lots, presenting opportunities to a wider range of businesses, including small businesses.

The proposed project will also provide a long-term revenue stream for the DLNR to support its wide range of programs including managing and maintaining the State's coastal, conservation and forestry lands and waters, historic sites, small boat harbors, parks, recreational facilities, and public safety programs.

3. **Support Existing Developments**

Although located on currently vacant land, the proposed DLNR Industrial and Business Park is proposed to be located on lands identified for development as the site is located within the UGB as established by the MIP. In addition, the proposed project site is located adjacent to other existing and proposed industrial projects and uses such as the Pulehunui Industrial Park, an 86-acre, 28-lot heavy industrial subdivision, as well as the existing National Guard Armory. The existing Central Maui Baseyard, a light industrial subdivision, is located approximately 0.5 mile to the north of the project site along Maui Veterans Highway. The location of the project is one that will support the infill of this urban use-designated area. Furthermore, the location of the proposed project in relation to the other aforementioned projects is such that it will encourage efficient use of public investments, through the use of a shared access road (Kama'āina Road and Firebreak Road) with the Pulehunui Industrial Park and a shared access road with the Maui Raceway Park.

4. **Coordinate and Leverage State and County Policies and Investment**

In addition to the DLNR Industrial and Business Park, other state agencies envision projects in the Pulehunui area. The State Department of Public Safety (PSD) and Department of Accounting and General Services (DAGS) are

proposing the Maui Regional Public Safety Complex (MRPSC) at Pulehunui, adjacent to the DLNR Industrial and Business Park. Additionally, the DHHL owns lands in the Pulehunui region, including approximately 184 acres of land across Maui Veterans Highway from the DLNR's project.

It is noted that there has been past coordination amongst the State agencies with landholdings at Pulehunui, particularly during the County of Maui's General Plan Update process. DLNR, DHHL, PSD, and DAGS collaborated in their request to the Maui County Council to have the various agencies' lands/projects in the Pulehunui region included in the MIP's UGB. Since that time, the MIP was adopted with 280 acres of DLNR's 655 acres of landholding at Pulehunui included in the UGB. The proposed site for the MRPSC was also included in the UGB.

Although there has been coordination amongst the State agencies in the past, each project is a separate and distinct project from each other and does not represent a single large project. The DLNR Industrial and Business Park, proposed MRPSC, and proposed DHHL project are physically and functionally separate projects that are defined by different missions and timeframes and are owned and managed by different State agencies.

The agencies are continuing to work with each other to assess the feasibility of coordinated infrastructure to take advantage of the proximity of the various projects. It is noted that the DHHL is leading an effort to prepare an infrastructure master plan for the Pulehunui region. When complete, a separate EIS will be prepared for the infrastructure master plan.

Because the DLNR Industrial and Business Park is further along in its planning process, the EIS prepared for the project will assess infrastructure to service the DLNR project as a stand-alone project. To the extent that there are opportunities to connect to infrastructure systems developed in conjunction with neighboring projects, as identified in the infrastructure master plan process, those can be assessed in the context of alternative infrastructure system opportunities. However, the DLNR Industrial and Business Park will not be dependent upon such infrastructure connections.

5. **Value Communities and Neighborhoods**

The proposed DLNR Industrial and Business Park is envisioned to operate like a business community. In addition to the traditional industrial uses, the proposed project will include limited commercial uses, many of which are intended to serve the day to day needs of the industrial workers. As previously discussed, the proposed project will include amenities such as pedestrian walkways and connections to the existing bikeway along Maui Veterans Highway which also provides linkages to other community amenities.

6. **Promote Community and Stakeholder Collaboration in Development Decisions**

An important aspect of the proposed project is a program of stakeholder and community engagement. The DLNR has met, and will continue to meet with surrounding landowners, elected officials, and other community stakeholders during the Environmental Impact Statement (EIS) process to discuss the proposed project and answer questions that may arise. In addition, following processing of the EIS, further opportunities for community input will be provided through the State Land Use Commission District Boundary Amendment, County Community Plan Amendment, and County Change of Zoning processes.

7. **Preserve and Perpetuate Our Island Cultural Values**

An Archaeological Inventory Survey (AIS) has been prepared for the project and submitted to the State Historic Preservation Division (SHPD) for review and acceptance. The AIS revealed the presence of a single historic site, a Historic-era irrigation ditch. The site was properly assessed per SHPD guidelines. The AIS states that it is highly unlikely that there would be an inadvertent discovery of significant historic properties during implementation of the proposed project and as such, no mitigation was recommended. In addition, a Cultural Impact Assessment (CIA) was prepared in order to identify the possibility of previous cultural practices and resources within the vicinity of the project area, and to assess the potential for project-related impacts upon any known resources. The CIA did not identify any known cultural practices within the project area.

C. RESOURCE CONSERVATION

The following resource conservation initiatives are proposed as way of developing in a less impactful, and more sustainable way by being less resource-consumptive. As previously noted, although the DLNR Industrial and Business Park is owned by the DLNR, each individual lot, with the exception of government facilities, will be developed by its lessee. As such, the implementation of the following resource conservation measures will be done at the discretion of the lessee. A copy of the Sustainability Plan

will be provided to lessees who will be encouraged to implement specific measures outlined herein.

1. **Energy Efficiency**

Because the proposed project will involve new construction, individual lots have the opportunity to utilize renewable energy techniques while also achieving a high level of energy reduction. The Hawai'i Clean Energy Initiative (HCEI) establishes benchmarks for project energy modeling and performance targets. The HCEI has two (2) primary components – demand reduction and renewable production. Although the HCEI is a statewide program directed at the public utilities rather than individual projects, the established goals can be used as a model to set energy targets at the individual project level. Specific energy reduction and production strategies which can be explored for incorporation in the proposed project are listed below:

Reduction Techniques

- Orienting buildings for reducing heat gain
- Maximizing use of natural daylighting
- Fenestration considerations for maximizing natural ventilation
- Shading of windows and doors through use of overhangs
- Landscaping which maximizes shading of the site
- Cool roof/green roof strategies
- Reducing paved areas wherever able to reduce urban heat island effect
- Dual pane window and door treatments
- Energy efficient appliances
- Split air conditioning systems
- Occupancy sensors and/or dimmable light switching
- Programmable thermostats
- Predominant use of LED lighting

Production Techniques

- Solar hot water heating
- Photovoltaic (PV) panels
- Chiller heat rejection capture for water pre-heating wherever centralized cooling is being used

It is noted that because the project site is located in the vicinity of the Kahului Airport, the following recommendations are offered in regards to PV systems if

they are to be installed on buildings within the project as PV systems located in or near the approach path of aircraft into an airport can create a hazardous condition for a pilot due to possible glint and glare reflected from the PV array.

- Prior to PV installation, a Glint and Glare Analysis shall be prepared.
- The highest rated non-glare material is recommended to be used in the PV system to mitigate potential hazard to the greatest degree possible.
- If glint or glare from the PV is found to create a hazardous condition for pilots, the owner of the PV system must be prepared to immediately mitigate the hazard, upon notification by the State Department of Transportation, Airports Division or the Federal Aviation Administration.
- PV Installations have been known to emit signals that create radio frequency interference (RFI) and disrupt air-to-ground communications. Tenants must ensure the installation does not create an RFI hazard.

2. **Water Efficiency**

Water efficiency is an important resource issue related to sustainability. Because most water in Hawai'i is extracted from sub-surface aquifers and then treated prior to being dispersed, potable water distribution in Hawai'i has a high embedded energy content. This means that water conservation strategies are oftentimes doubled as energy conservation strategies. Because of this, it can be said that water is a particularly important resource issue for Hawai'i. Water efficiency involves two (2) related strategies:

- Design buildings and landscaped areas to reduce overall water demand as much as possible
- Use the most appropriate water quality for the projected need (balance potable and non-potable uses)

From a project-wide standpoint, it is noted that should the project require an individual wastewater treatment plant (instead of connecting to the County of Maui system), R-1 recycled water would be used to irrigate common areas. Initially, when R-1 flows are low due to low project occupancy, potable water may also be needed temporarily for irrigation purposes until sufficient R-1 supply is available.

In addition, strategies for individual lessees' consideration have been developed for water efficiency which promote the goal of conservation. Specific water conservation strategies which can be explored for incorporation in the proposed project are listed below:

- Low flow fixtures
- Dual flush toilets

- Leak detection sensors and alarms
- Minimizing landscaped areas requiring extensive irrigation
- Use of landscaping materials with low water needs
- Smart irrigation systems and moisture sensing feedback technology
- Use of drip irrigation as the predominant delivery system

3. **Waste Management**

In Maui County, waste disposal is constrained due to the capacities of existing landfills. As such, waste management plans, waste reduction goals, and recycling are important to ensure that further strain is not placed upon existing resources. Specific waste reduction strategies which can be explored for incorporation in the proposed project are listed below:

- Collection, shredding, and composting of all green and cellulosic waste generated by site preparation and grubbing
- Reuse site-generated compost in landscaping
- Reuse shredded wood and larger green stock as mulch in planting beds and erosion control during establishment periods
- Designing buildings to use standard material sizes to minimize waste from non-standard dimensions
- Requirements for vendors to utilize recyclable shipping materials, and for suppliers to remove packaging materials from site after delivery
- Using offsite modularized construction techniques to minimize waste
- Onsite sorting and separation of construction waste to maximize downstream recycling capture
- Working with local recycling and waste companies to identify and help grow recycling operations, especially for such materials as cardboard, wood remnants, rock, and rebar

4. **Low Impact Development**

The DLNR Industrial and Business Park development will be required to retain all increases in stormwater runoff generated by the development that will take place as per Maui County standards. The Maui County Department of Public Works has adopted Rules for the Design of Storm Water Treatment Best Management Practices (Storm Water Rules), aimed at establishing controls on the timing and rate of discharge of storm water runoff to reduce runoff pollution to the maximum extent practicable through mandating the use of Best Management Practices (BMPs) and encouraging the use of Low Impact Development (LID) and other engineering design considerations. Specifically, the Storm Water Rules seek to minimize runoff that could potentially harm the ocean and other receiving waters.

Compliance with the stormwater rules will be assessed during the construction permit processing phase.

In an effort to gain additional efficiencies across the entire project site with regards to stormwater runoff, a series of vegetated swales and stormwater detention basins will be developed to capture, treat, and detain stormwater flows across the site. The Preliminary Engineering and Drainage Report prepared for the project recommends a "decentralized" stormwater management system which utilizes many detention basins located throughout the site which work together in parallel or in series to achieve the net reduction in runoff. Inlets and/or catch basins will be installed along roadways to collect runoff and divert it to one (1) of the basins. Refer to **Figure 3**. Further LID measures that can be assessed for implementation on each individual lot may include:

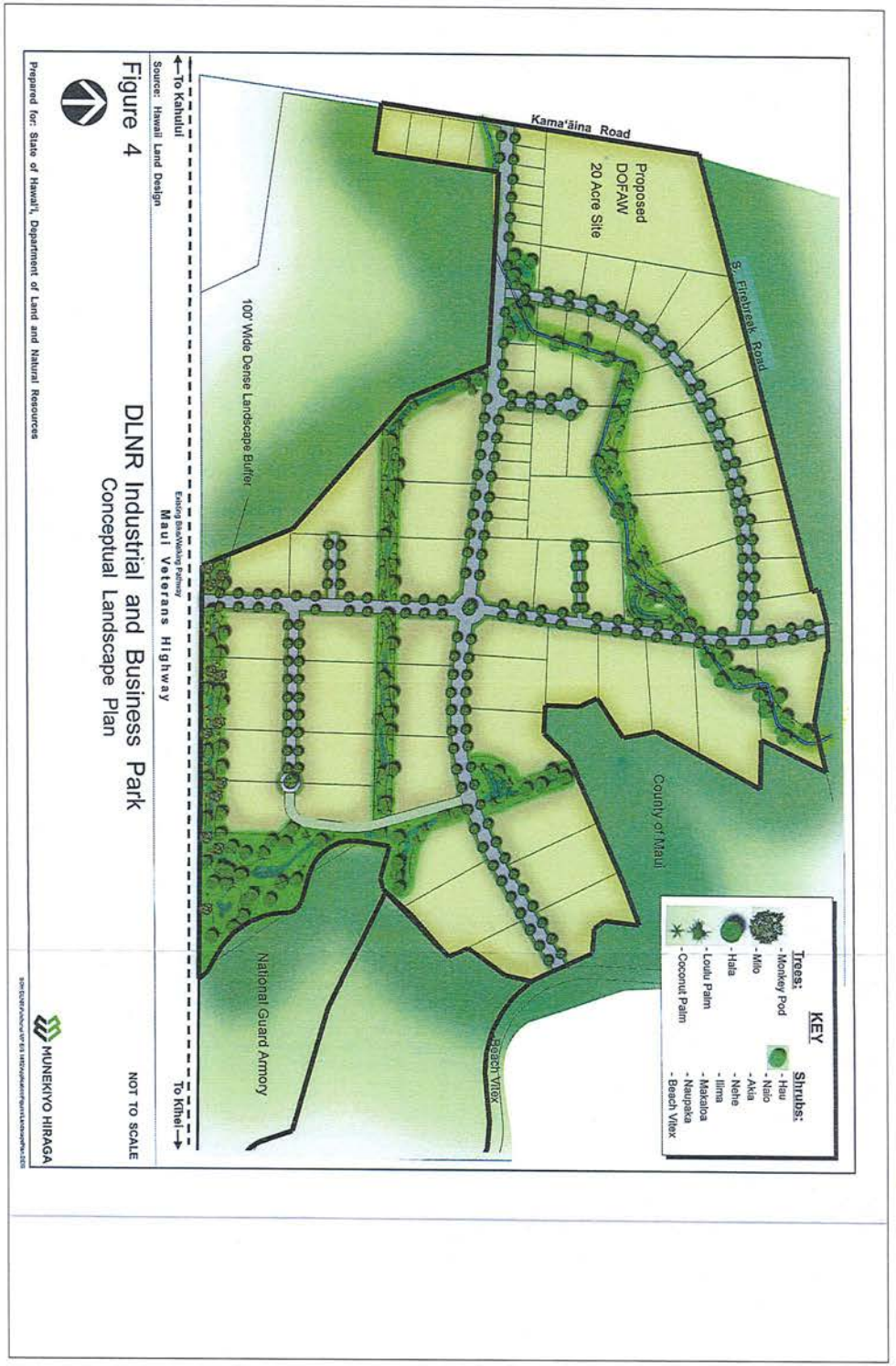
- Porous and permeable paving materials
- Vegetated swales and linear bioretention features along streets and in parking areas

5. **Climate Change and Hazard Mitigation**

The project site is located inland and away from the shoreline. As such, the site is not located within the Tsunami Evacuation Zone, as established by the County of Maui Emergency Management Agency's Tsunami Evacuation Map for the area, nor is the project site located within any of the Federal Emergency Management Agency's designated flood zones. Similarly, because the project site is not located near the shoreline, the project site is not subject to sea level rise considerations or shoreline development restrictions.

Because the project site is surrounded by currently fallow agricultural lands, there may be risk for potential wildfire hazards. However, the roadways surrounding the project site on all sides provide fire breaks, which could slow the potential spread of fires. In addition, the structures within the DLNR Industrial and Business Park will need to comply with all applicable building and fire codes.

The open space areas and common landscaped areas within the project will utilize native plants, xeriscaping, and drought-tolerant plants to the extent practicable. The landscape master plan prepared for the project calls for the use of such trees as milo, kou, hala and loulu palms, and such shrubs as naio, ʻākia, nehe, ʻilima, and naupaka. See **Figure 4**.



GREEN BUILDING STANDARDS IV

IV. GREEN BUILDING STANDARDS

During both construction and occupancy, buildings have direct and indirect impacts on the environment. Buildings consume energy, water, and raw materials. They also generate waste and may emit potentially harmful atmospheric emissions. In light of this, green building standards aimed at mitigating the impact of buildings on the natural environment through sustainable design have been created. Standards include design principles and also building certification and rating systems.

Again, as previously discussed, the majority of individual lots within the Department of Land and Natural Resources (DLNR) Industrial and Business Park, with the exception of government uses, such as the proposed Division of Forestry and Wildlife Baseyard, will be leased to tenants, who will be responsible for the vertical improvements on the lots. Tenants will be encouraged to utilize green building practices, but decisions on adoption of specific green building standards for individual lots will be made by each tenant. As will be noted below, State facilities will be required to meet specific green building standards in accordance with current state regulations.

A. LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN (LEED)

LEED is a well-known and utilized building certification program initiated by the U.S. Green Building Council (USGBC) that urges developments to seek innovative building solutions that are better for our environment and communities. LEED works for all types of buildings and at all phases of development from construction to operation. Projects pursuing LEED certification earn points for several different sustainability criteria. Based on the number of points achieved, the project can earn one (1) of four (4) certification levels – Certified, Silver, Gold, and Platinum and in one (1) of five (5) project types – Building Design and Construction, Interior Design and Construction, Building Operations and Maintenance, Neighborhood Development, and Homes. Generally, LEED buildings aim to be resource efficient by using less water and energy and reducing greenhouse gas emissions.

Recognizing the long-term benefits of green buildings, the State of Hawai'i enacted legislation, codified as Hawai'i Revised Statutes (HRS) Section 196-9, which provides that all State agencies shall design and construct buildings to meet the LEED Silver certification standard. As such, any State facilities developed within the DLNR Industrial and Business Park, such as the proposed Division of Forestry and Wildlife Baseyard, will meet LEED Silver certification standards.

B. ENERGY STAR

Energy Star was established in 1992 by the U.S. Environmental Protection Agency (EPA) under the Clean Air Act as a voluntary program which helps businesses and

individuals save money and protect our climate through superior energy efficiency. The program has helped identify and promote energy efficiency in products, homes and buildings nationwide.

The State of Hawai'i requires State agencies to evaluate the energy efficiency of all existing public buildings that are larger than 5,000 square feet or use more than 8,000 kilowatt hours (kWh) annually. Further, opportunities for increased energy efficiency must be identified by setting energy benchmarks for these buildings using Energy Star Portfolio Management. The Energy Star label has become a highly valued and recognized designation. An Energy Star designation means that a building is ranked in the upper 25 percent of all similar buildings nationally.

C. LEAD BY EXAMPLE (LBE) INITIATIVE

The LBE initiative began in 2006 in response to Hawai'i legislative and executive mandates to change the way that State agencies approach energy use in their operations and facilities. The initiative acknowledges the rising costs of energy in Hawai'i, the energy security benefits of alternative fuel use, and the many opportunities for increasing energy efficiency in new and existing State offices and facilities. In this initiative, executive agencies are following requirements established by Act 96, Session Laws of Hawai'i (SLH) 2006, Part III, which reflects Administrative Directive 06-01, issued on January 20, 2006 in which agencies were directed to improve energy, water, and resource efficiency in State buildings, increase fuel efficiency, and use alternative fuels in State vehicles. The LBE initiative represents an important step in achieving long-term economic and environmental benefits for the State of Hawai'i and is part of a comprehensive energy efficiency package passed in the 2006 legislative session.

Following the establishment of the LBE initiative, a number of agencies, including the DLNR, have committed to build more efficient buildings with improved indoor environmental quality.

Although State buildings are required to follow green building and energy efficiency standards in their construction, the lots within the DLNR Industrial and Business Park will be developed by individual tenants. Information on green building standards will be provided to tenants so they may be considered for implementation.

CONCLUSION V

V. CONCLUSION

The building industry has seen a shift in recent years towards utilizing sustainable practices in order to develop projects aimed at being less resource consumptive. In line with this are Federal, State, and local policies which have been established to promote the idea of sustainability and encourage behaviors that ensure quality of life for future generations.

The foregoing report was prepared to discuss opportunities for incorporating sustainable building and operating practices into the proposed Department of Land and Natural Resources (DLNR) Industrial and Business Park project as a whole and identifying strategies that may be considered for implementation by individual tenants. Although the DLNR will own and construct the infrastructure for the project, the development of the lots within the Industrial and Business Park will be the responsibility of each individual tenant. As such, sustainability measures that can be implemented at a project level, such as incorporation of bike paths and pedestrian walkways, vegetated swales and a decentralized system of stormwater detention basins, and R-1 Water use, have been identified. In addition, this report advanced common sustainable development actions which are considered to be reasonable in any development and would not present undue developmental hardships on the lessees. Tenants will be encouraged to adopt and implement sustainable practices, however, decisions on specific actions and design techniques will be made on a lot-by-lot basis.

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APPENDIX C

PRELIMINARY ENGINEERING AND DRAINAGE REPORT

PRELIMINARY ENGINEERING AND DRAINAGE REPORT FOR DLNR INDUSTRIAL AND BUSINESS PARK

Pulehunui, Maui, Hawai'i

December 17, 2018

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AUSTIN, TSUTSUMI & ASSOCIATES, INC. CIVIL ENGINEERS • SURVEYORS
CONTINUING THE ENGINEERING PRACTICE FOUNDED BY H. A. R. AUSTIN IN 1934

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PRELIMINARY ENGINEERING AND DRAINAGE REPORT FOR DLNR INDUSTRIAL AND BUSINESS PARK

A. INTRODUCTION

The purpose of this study is to provide an overview of the preliminary civil engineering design for the DLNR (State of Hawaii Department of Land and Natural Resources) Industrial and Business Park. This study determines the anticipated water demand and wastewater flows, and presents proposed water system and wastewater system designs. This study also analyzes the existing drainage conditions at the project site and provides a concept drainage design for the proposed project that will meet the "Rules for the Design of Storm Drainage Facilities in the County of Maui". An opinion of probable construction costs for the proposed water, wastewater, and drainage improvements is presented in Appendix F.

B. LOCATION

The DLNR Industrial and Business Park is located in Pulehunui, Maui, Hawaii, approximately two (2) miles north of the Maui Veterans Highway (fka Mokulele Highway) and the Piilani Highway intersection. The main access to the project will be from a new full intersection on Maui Veterans Highway. Secondary accesses will be off of Kamaaina Road on the north, South Firebreak Road on the east, and from the access road to the Maui Raceway Park on the south. The project is bordered to the north and east primarily by agricultural land owned by Hawaiian Commercial and Sugar Company (HC&S). Maui Veterans Highway borders the west edge of the project. To the south of the project is State of Hawaii land, which includes the National Guard Amory and the Maui Raceway Park. The proposed project site is located on a 280 acre portion of TMK (2) 3-8-008: 001. (See Exhibit 1 - Tax Map and Exhibit 2 - Aerial Location Map.

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C. PROJECT DESCRIPTION

The proposed DLNR Industrial and Business Park will include small, medium and large lots envisioned to be utilized for light industrial uses. Necessary infrastructure such as roadway, water, sewer, and drainage systems will be developed to support those planned uses. The entire DLNR Industrial and Business Park, including lands proposed for government uses, such as the Division of Forestry and Wildlife (DOFAW) Baseyard, is proposed to be rezoned to and developed as M-1 Light Industrial uses. (See Exhibit 3 - Preliminary Site Plan.)

The DLNR Industrial and Business Park is located within the Urban Growth Boundary of the Maui Island Plan. The project site has historically been utilized for sugar cane cultivation via a lease to HC&S. However, the last crop of sugar cane was harvested in December 2016, and the site is no longer being cultivated. The Maui Island Plan states that the site represents a logical and planned expansion for industrial uses on Maui.

The Department of Hawaiian Home Lands (DHHL), the State Department of Public Safety (DPS), and the Department of Accounting and General Services (DAGS) are also proposing projects in the region. There may be opportunities to coordinate infrastructure to take advantage of the proximity of the various projects. However, this report will assess infrastructure needs assuming the DLNR Industrial and Business Park is a stand-alone project.

D. EXISTING DRAINAGE

Most of the site was used many years for sugar cane cultivation, but HC&S's harvesting operations ceased in December 2016. The land is now growing back as a mix of cane grass and weeds, with dispersed crop residue. HC&S is planning to plant and establish grass in their fallow agriculture areas in order to maintain a vegetative cover over the soil and help prevent erosion.

The project area is relatively flat with an average slope of around one and a half percent toward Maui Veterans Highway. The landform is fairly uniform with little

undulation. The only exception is a slight depression in the southern part of the site mauka of the National Guard Armory. The depression is not a drainage-way but it is a point where runoff appears to concentrate and flow into the National Guard Armory site. The remaining majority of the site area drains as dispersed overland flow to Maui Veterans Highway. (See Exhibit 4 - Existing Conditions Drainage Area Map.)

The soils in the area consist predominantly of Ewa silty clay loam (EaA) and Ewa cobbly silty clay loam (EcA and EcB). The Ewa silty clay loam soils are in Hydrologic Soil Group "B" and have good infiltration characteristics. The NRCS Soil Survey reports that no groundwater or bedrock is present in a typical 60 inch deep soil profile. A small portion of the site (about 12 acres) in the southwest corner contains Pulehu silt loam (PpA) and Pulehu cobbly silt loam (PrA). Another small portion of the site (about 10 acres) near Raceway Park Drive and the former airport runway contains Waiakoa extremely stony silty clay loam (WID2). The Pulehu soils are fairly similar to the Ewa soils and have good infiltration. The Waiakoa soils have more moderate infiltration characteristics and typically have bedrock at a depth of 20 to 40 inches.

The project lies in FEMA Zone X and does not contain any FEMA designated Special Flood Hazard Areas (SFHAs).

The existing site is divided into four drainage areas based on where each area is draining. Drainage Area E1 consists of the project area mauka of the Camp 6 Reservoir Irrigation Ditch. The Camp 6 Ditch is a concrete lined channel that traverses the mauka part of the site, carrying water from HC&S Reservoir 90 (also referred to as HC&S Reservoir 6) to Puunene Mill and fields to the north. The irrigation ditch is typically bordered by earthen berms that serve to block surface water from directly entering the ditch. These berms block inflows in smaller storm events, but in larger storms it is likely that the surface runoff enters the ditch via gaps and low points in the berms. The irrigation ditch is relatively small and is estimated to only have a full flow capacity of around 100 cubic feet per second (cfs). This does not leave significant reserve capacity for intercepting surface runoff, especially if it already contains irrigation water. Any excess runoff above the ditch's full flow capacity will spill over the ditch and proceed west into makai drainage areas.

Drainage Area E2 and E3 consist of the main areas of the site. Area E2 drains south and west into the overland flow path that leads into the National Guard Armory site. Area E3 drains more directly west towards Maui Veterans Highway.

A small, roughly five acre portion of the site located along Kamaaina Road (Drainage Area E4) contains six livestock pens and dirt roads used for loading and unloading animals. An existing retention basin at the west end of the fenced lot collects and retains runoff from this drainage area.

In addition to the onsite areas, there are offsite areas mauka of the project that also contribute runoff to the project site. Offsite Drainage Area O-1 is over 800 acres and drains toward HC&S Reservoir 90 and the south portion of the site. Most of this drainage area was also formerly used for sugar cane cultivation, although the south portion contains bare ground and being used by Hawaiian Cement for their concrete production operations. Reservoir 90 is a roughly 12-acre irrigation reservoir that is currently being maintained mostly full with limited depth above its normal water level for additional storage. For runoff calculations, it is assumed that the reservoir does not have any retention capacity above its normal water surface elevation, and therefore that it doesn't have any effect on peak runoff rates from Drainage Area O-1. The 100-year peak flowrate from Drainage Area O-1 is much larger than the capacity of the downstream Camp 6 Ditch. The peak flows will spill over the ditch and flow overland in a westward direction toward the southernmost portion of the site and then into the National Guard Armory site. The Haiku Ditch also contributes irrigation water into the reservoir, although this additional flow is not considered. It is assumed that the inflow ditch capacity matches the outflow ditch capacity and the two irrigation flows cancel each other out.

Offsite Drainage O-2 is the area that is above the site, but makai of the Haiku Ditch. Runoff from this area flows overland to South Firebreak Road and enters the mauka edge of the site as a mix of concentrated and non-concentrated flow. There are no drainage systems at South Firebreak Road and runoff flows directly across the at-grade roadway and into the site.

Offsite Drainage Area O-3 is the former cane field area just north and west of the project. Runoff from this area flows west toward Maui Veterans Highway where it either drains through a highway culvert or flows south along the road right-of-way. While this area does not directly drain into the project site, the drainage that flows south along the highway right-of-way can potentially affect low areas of the site along the highway frontage.

At Maui Veterans Highway, the roadway grade is elevated slightly above the existing ground and several double 24-inch culverts pass stormwater under the highway. These culverts were only sized to convey localized runoff from the highway right-of-way area. The 24-inch culverts do not have capacity for conveying the large amount of runoff from the mauka contributing area. Each is estimated to have a capacity of around 50 cfs. There are two double 24-inch culverts along the project site's frontage with Maui Veterans Highway and three more downstream along the National Guard Armory frontage.

The Maui Veterans Highway drainage design assumed that when large storm events occur, that runoff will not be able to flow through the 24-inch culverts and will instead make its way south along the mauka side of the highway right-of-way, across Raceway Park Drive, to existing Maui Veterans Highway Culvert 3. Existing Culvert 3 is a triple twelve (12) foot by eight (8) foot box culvert that crosses under Maui Veterans Highway approximately 1,600 feet south of Raceway Park Drive. The contributing drainage area to this culvert not only includes the project site, but also includes areas that extend as far mauka as Kula. The Maui Veterans Highway Drainage Report lists an overall drainage area of 3,389.3 acres to Culvert 3 and predicts a 100-year runoff of 1,700 cfs.

Downstream of Maui Veterans Highway, runoff flows through a drainage ditch system in a southwesterly direction across agricultural land, to the final discharge point at Kealia Pond and Maalaea Bay.

Since the proposed stormwater management system will be divided into contributing areas less than 100 acres, the 50-year, one-hour storm is used for the design of onsite facilities. However, since offsite Drainage Area O-1 is over 800 acres in

size, the 100-year, 24-hour storm is used specifically for the design of that area and its receiving drainage systems. The existing conditions runoff is summarized in Table 1.

Table 1: Existing Conditions Runoff Summary

Drainage Area	Area (ac)	Runoff Q 50 (cfs)
E1	84.669	64.35
E2	74.498	52.15
E3	115.698	74.05
E4	5.277	0*
ONSITE TOTAL	**280.142**	**190.55**
O-1	806.600	586.13**
O-2	78.097	53.11
O-3	86.954	59.13

* The 50-year runoff from Drainage Area E4 is fully retained in the existing retention basin located within that drainage area.

** The runoff listed above for Drainage Area O-1 is for the 100-year, 24-hour storm.

The retained water in existing Reservoir 90 just mauka of the site presents a possible risk to the DLNR Industrial and Business Park as well as to other downstream areas, such as the National Guard Armory and Maui Veterans Highway. Reservoir 90 is a State regulated dam and is owned and operated by HC&S. HC&S plans to continue to use the reservoir and its associated irrigation ditches as part of their diversified agriculture operations. A 2015 inspection report by the DLNR Dam Safety Program identified 14 different deficiencies in the dam and its appurtenances. As the owner and operator of the reservoir, HC&S is responsible for addressing the deficiencies noted in the inspection report. If the dam's earthen embankment were to ever overtop or fail, the reservoir's water would quickly inundate downstream areas with destructive flood flows.

The project site is downstream from the dam and is confirmed to be within the dam's evacuation zone.

E. EXISTING WATER SYSTEM

The project area is currently undeveloped and there is no water service to the project site. The County of Maui, Department of Water Supply (DWS) provides water service within the vicinity of the project, including servicing the National Guard Armory. DWS has two transmission waterlines in the vicinity of the project. These are the 18-inch Kihei Water Development Project (KWDP) waterline and the 36-inch Central Maui Water Transmission System (C.M.W.T.S.) waterline. (See Exhibit 5 - Existing Water Map.)

The National Guard Armory is serviced from a 12-inch waterline connected to the 36-inch C.M.W.T.S. waterline at the southern intersection of Maui Veterans Highway and Mehameha Loop, with a pressure reducing valve (PRV) at this connection. There is also a 12-inch waterline connected to the 36-inch C.M.W.T.S. waterline further north along Mehameha Loop that extends to the northern intersection of Maui Veterans Highway and the loop road. An eight-inch cast iron waterline connects to this 12-inch waterline at this northern intersection and traverses approximately 2,800 feet eastward along Kamaaina Road.

The source water for the C.M.W.T.S. is groundwater wells in the Waiehu area, which draw water from the Iao Aquifer. The Iao Aquifer is designated as a water management area under the State of Hawaii Commission on Water Resource Management (CWRM), which means that the current withdrawal from the aquifer is 90% of the sustainable yield of the aquifer. Water is stored in a 1.0 million gallon (MG) tank in Waiehu, which has a top elevation of 511 feet mean sea level (msl) and a bottom elevation of 490.75 feet msl. Water from this tank flows by gravity to Kihei via the C.M.W.T.S. waterline.

The source water for the 18-inch KWDP is primarily the Mokuhau Wells, which also draw water from the Iao Aquifer. The wells are located at the end of Mokuhau Road, just north of Iao Stream.

F. EXISTING WASTEWATER SYSTEM

The project site currently generates no wastewater flow. The County does not have a sewer collection system in the vicinity of the projects. Existing developed lots in the vicinity have their own on-site individual wastewater systems for treatment and disposal of their wastewater. The County does not have any wastewater treatment plants in the near vicinity of the project. The Wailuku-Kahului (W-K) Wastewater Reclamation Facility (WWRF) is located approximately six miles north of the project and the Kihei WWRF is located approximately six miles south of the project.

G. PROPOSED DRAINAGE SYSTEM

The DLNR Industrial and Business Park will include small, medium and large lots envisioned to be utilized for light industrial and limited commercial uses. The DLNR Industrial and Business Park is proposed to be rezoned to and developed as M-1 Light Industrial uses. The development of the project site will result in increased impervious surfaces and thus increased stormwater runoff. Since the downstream drainage systems are sized for the existing conditions of the contributing watershed, the runoff from the developed site must be managed so that it does not exceed existing levels.

To mitigate the increase in stormwater runoff, new detention basins are proposed to store runoff and slowly release it over time. As opposed to having one large basin for the entire site, the proposed concept is for "decentralized" stormwater management with many open detention basins spread throughout the proposed development and integrated into open space areas. The basins will work together in parallel or in series to achieve the net reduction in runoff. Some basins may have low-flow outlets, while other basins may be designed for full retention. The basins will all have provisions for safe management of overflows.

Piped storm drain systems with periodic grated inlets or catch basins will be installed in the proposed streets to collect runoff and route it to one of the proposed detention basins. Both curb and gutter as well as non-curbed roadway sections are being considered. Drainline stubs may be provided to each lot in order to reduce the

lot's surface runoff contribution directly to the street. (See Exhibit 6 - Proposed Conditions Drainage Area Map.)

Since there is a significant amount of offsite contributing drainage area mauka of the project site, diversions and thru conveyance systems need to be provided. An interceptor ditch is proposed to be installed along the mauka edge of the site to collect and convey runoff from Offsite Drainage Area O-2. At the south portion of site, in Drainage Area P3 where there is the slight existing depression, an interceptor ditch and a piped or ditched conveyance system is proposed to be installed to safely pass the offsite runoff through. No detention systems should be placed within the thru conveyance systems due to the large volume of runoff flowing through them.

The proposed grading will be limited to the roads, detentions basins and green areas, and will include a mix of excavation and embankment, with a desire to balance the earthwork as much as possible. Grading of the lots will be the responsibility of the lot owners, and will occur as the lots are developed. Detention basins will be excavated lower to facilitate gravity drainage of stormwater. Overall no big cuts or fills are anticipated. At the makai edge of the project it is recommended that the lots be graded at least as high as Maui Veterans Highway in order to prevent the highway runoff from affecting the project site.

The proposed conditions runoff is summarized in Table 2 below. As can be seen in the table, the total onsite runoff after detention/ retention will be approximately 124.42 cfs, which is a 35 percent reduction from existing conditions.

Table 2: Proposed Conditions Runoff Summary

Drainage Area	Area (ac)	Runoff Q 50 Before Retention (cfs)	Proposed Q 50 After Retention (cfs)
P1	81.899	357.57	0
P2	33.846	135.25	24.14
P3	30.199	129.61	18.50
P4	71.034	289.11	0
P5	57.887	248.45	81.78
P6	5.277	26.16	0
ONSITE TOTAL	**280.142**	**1,186.15**	**124.42**
O-1	806.6	586.13	586.13**
O-2	78.097	53.11	53.11
O-3	86.954	59.13	59.13

* See Appendix A for Detention Basin Summary.

** The runoff listed above for Drainage Area O-1 is for the 100-year, 24-hour storm.

The drainage system for the project will be designed to meet the requirements of the County's drainage rules. It is not expected that any future adjacent development projects will negatively affect the DLNR Industrial and Business Park from a drainage standpoint because the new developments will also be required by the County's drainage rules to not change drainage patterns or increase flows from the existing condition.

The proposed drainage detention basins will be grassed (but not landscaped) and unlined. At a minimum, the bottom 18 to 24 inches of the proposed onsite detention basins will be reserved for extended detention of the water quality volume. The water quality volume, which represents 90 percent of the annual runoff volume, will be retained, ensuring that pollutants are captured and suspended solids settle out. The

retained water will infiltrate into the soils gradually over 24 to 48 hours and help recharge groundwater. Considering the low annual rainfall of 13 inches per year and the good soil infiltration rates, the basins are expected to rarely contain ponded water.

Low-Impact Development (LID) practices that could be considered include: uncurbed roadways with dry swales, pervious pavement, and bioretention basins. The County's urban industrial standards require that roads be constructed with curbs, gutters and sidewalks. Therefore, the use of uncurbed roadways with dry swales would be considered non-standard and would require an exemption by the Department of Public Works. However, the use of dry swales and pervious pavement may be able to reduce the amount of detention basin volume that is required due to the increased runoff travel time and additional infiltration. Dry swales and pervious pavement could work well given the mild slopes, low rainfall, and good infiltration characteristics of the soil. The drawback is that additional maintenance would be required to ensure their continued effective operation. Additionally, depending on the future uses of the Industrial and Business Park, the number and type of heavy vehicles could make pervious pavement cost prohibitive.

The use of bioretention basins, which are primarily just used for improving the water quality of the storm runoff, on this large project could also be a challenge given that the contributing drainage area is limited to a maximum of one acre by the County's drainage rules, and their storage volume is limited to being 6-inches deep. The water quality volume is already planned to be completely retained in the proposed detention basins, so additional LID measures are not essential. The costs and benefits of implementing additional LID practices will be evaluated further in the design documents phase.

Maintenance of stormwater detention and water quality Best Management Practices (BMPs) is critical to their continued effective operation over time. A maintenance plan will be developed for managing the BMPs for the future project site. The maintenance plan will include requirements for performing regular inspections of the detention basins, removing accumulated sediments and debris, maintaining vegetation, and ensuring that water quality structures are in working order. The maintenance plan

will be developed during the subdivision review process, whereby, DLNR will be required to maintain BMPs in perpetuity.

The DLNR Industrial and Business Park is expected to have a Pollution Prevention Plan (PPP) that is appropriately designed to address pollutants associated with light industrial developments. For example, the PPP may state that industrial liquids from cleaning and maintenance (e.g., gas, diesel, etc.) shall pass through a separator sump, if necessary, before being discharged to the drainage system. The PPP will include BMPs to minimize the potential for contaminants to enter the drainage system, and will include methods to prevent toxic and hazardous substances from reaching receiving waters. Specific practices to address potential pollution would, most likely, be addressed on a lot by lot basis, and would be developed during the building permit review process based upon the lessors specific use of their lot. The lessor will be required to maintain their specific BMPs through the entire term of their lease.

During the construction phase of the project, the Contractor shall utilize the following BMPs:

- Contractor shall prevent cement products, fuel and other toxic substances from falling or leaking into the ground.
- Contractor shall remove all construction debris and toxic substances daily to prevent entry into the ground.
- Contractor shall properly maintain vehicles and equipment to prevent oil or other fluids from leaking into the ground.
- Contractor shall wash out concrete trucks, and equipment such as wheelbarrows and hand tools used with concrete, off-site.
- Contractor shall provide stabilized construction entrances and truck wash-down areas.
- Contractor shall periodically spray loose soils with water to minimize air-borne dirt particles.

- Contractor shall properly install and maintain erosion control barriers such as silt fencing or straw bales to keep sediment-laden runoff on-site.

- Contractor shall disturb the smallest area possible and retain ground cover until the last possible date.

- Contractor shall stabilize denuded areas by sodding or planting as soon as possible, and shall use high seeding rates to ensure rapid stand establishment.

- Contractor shall apply biocides only during dry periods of low rainfall to minimize chemical run-off.

As mentioned previously, existing HC&S Reservoir 90 mauka of the project site poses a possible risk to the proposed DLNR Industrial and Business Park and other downstream properties. A number of deficiencies in the dam have been identified by the DLNR Dam Safety Program. Since HC&S plans to continue to impound water in this reservoir, it is recommended that DLNR work with and/ or negotiate with HC&S to further assess the dam and make the required repairs and upgrades.

H. PROPOSED WATER SYSTEM ALTERNATIVES

1. General

This study is based on three alternatives for water supply. Water Alternative 1 is based on the assumption that water for the project will be provided by the County of Maui, Department of Water Supply (DWS). The assumption is that the project's water system will connect to DWS's water system which will supply water for potable, non-potable and fire protection purposes. Water Alternative 2 is based on development of a new brackish water source, treatment of the brackish water, installation of new transmission waterlines, and development of a storage tank. Water Alternative 3 is similar to Alternative 2, except the source of water would be surface water from East Maui Irrigation's

(EMI's) ditch system. Alternatives 2 and 3 would be privately owned and operated systems.

At this time, the water system alternatives are intended to provide water only to DLNR's project. However, the Department of Hawaiian Home Lands (DHHL) is in the process of preparing a regional infrastructure master plan to service State Lands in the Puunene/Pulehunui area. Therefore, DLNR may collaborate with DHHL in the future on a water system that could service all developments in the project vicinity.

DHHL also has certain rights to adequate reserves of water for their developments. As such, development of a new water source by DLNR will require further analysis to confirm that the new source would not interfere with DHHL's inherent rights to the water.

2. Proposed DWS Water System – Alternative 1

a. Water Demand

For Water Alternative 1, the estimated water demand for the project was calculated two ways, using two criteria from the DWS's Water System Standards, dated 2002 (WSS). Demand 1 was calculated using the WSS average day unit demand for "Commercial/Industrial Mix", which is 140 gallons per day (gpd) per 1,000 square feet (sf). For the purposes of this report, an assumption was made that the average building area per acre would 17,424 square feet, which equates to a Floor Area Ratio (FAR) of 0.40. The average day water demand for the lots would be approximately 540,000 gpd, based on an approximate lot area of 227 acres. This demand includes a minimal amount of irrigation use for each lot. (See Appendix B, Water Calculations.) The DWS typically uses this demand during the building permit phase of a project.

Demand 2 was calculated using the WSS average day unit demand for "Commercial Only" and "Light Industry", both of which are

6,000 gpd per acre. The average day water demand for the lots would be approximately 1,287,000 gpd. This demand includes irrigation of the lots. The DWS typically uses this demand during the master planning phase of a project.

However, based on water use at an existing similar commercial/light industrial development in the Waiko area, this WSS demand of 6,000 gpd/acre is likely too conservative. The existing development, called Consolidated Baseyard, had an average per acre demand in 2016 of approximately 1850 gpd/acre. Therefore, Demand 2 is considered to be too high of a demand for this project.

For the roadways, an assumption was made that 40 percent of the right-of-way may be landscaped, and that the irrigation demand would be 1,700 gpd/acre, based on the WSS demand for "Schools/Parks". Based on these assumptions, the projected average irrigation demand for the roads is estimated to be approximately 15,500 gpd. This irrigation demand may be revised based on further analysis of the landscaping design undertaken as part of the detailed engineering design process for this project.

For the green areas and parks, an assumption was made that 80 percent of the area may be irrigated, and that the irrigation demand would be 1,700 gpd/acre. The projected average irrigation demand for the green areas and parks is estimated to be approximately 41,600 gpd.

In accordance with the WSS, the maximum daily water demand is calculated as being 1.5 times the average daily demand.

Table 3 shows the projected water demands for the two demand options.

Table 3. Estimated Water Demands – Demands 1 and 2

Description	Demand 1	Demand 2
Unit Average Water Demand	140 gpd/1,000 sf	6,000 gpd/acre
Total Average Day Water Demand for Lots	540,000 gpd	1,287,000 gpd
Maximum Day Water Demand for Lots	809,000 gpd	1,931,000 gpd
Average Day Road and Green Area Irrigation Demand	57,000 gpd	57,000 gpd
Maximum Day Road and Green Area Irrigation Demand	86,000 gpd	86,000 gpd
Total Average Day Demand	**597,000 gpd**	**1,344,000 gpd**
Total Maximum Day Demand	**895,000 gpd**	**2,017,000 gpd**

b. Water Source

The DOFAW site, which was anticipated to be on an accelerated development time frame compared to the rest of the project, has been granted approval by DWS to connect to the nearby County water system to supply water to the site. (See Appendix C for correspondence regarding water supply.) The nearest DWS infrastructure is the 8-inch waterline along Kamaaina Road, which is connected to the 36-inch Central Maui Water Transmission System (C.M.W.T.S.) waterline which conveys water from Central Maui to Kihei and beyond. The water for the DOFAW site would be supplied by the 8-inch waterline in Kamaaina Road.

In the past, DWS has stated that there would be enough source water for the entire DLNR Industrial and Business Park, as well as the DOFAW site. DWS did not state what the source water would be for the remaining part of the DLNR Industrial and Business Park. However, the

expectation was that the water would also be supplied from the 36-inch C.M.W.T.S. waterline.

In a February 16, 2018 meeting with DWS, DWS stated that DWS's new Administrative Rules, effective January 29, 2018, would impose a significant limitation on DWS servicing the entire project area, unless DLNR were to develop a new water source for DWS.

DWS's preference is that a new water source be able to supply the 36-inch C.M.W.T.S. waterline. The existing source water for the 36-inch C.M.W.T.S. waterline are groundwater wells in the Iao Aquifer System that is stored in the existing C.M.W.T.S. Source 1.0 MG Tank (aka: Waihee Tank). The Waihee Tank services portions of Waihee, Maalaea, Pulehunui and South Maui.

The Iao Aquifer lies on the flank of the West Maui Mountains and encompasses about 25 square miles. The Iao Aquifer is located between the ridge south of Waihee River and the ridge north of Waikapu Stream, and between the coast, the summit of the West Maui Mountain and the crest of the isthmus. In 2003, CWRM designated the Iao Aquifer as a groundwater management area with a sustainable yield of 20 million gallons per day (mgd). The CWRM regulates well pumpage in the aquifer using the 12-month moving average statistic. In 2003, the 12-month moving average of water withdrawals exceeded 18 mgd, or 90 percent of the sustainable yield, thus triggering the designation as a groundwater management area.

One of the largest systems drawing water from the Iao Aquifer was Shaft 33, which consistently supplied five mgd to DWS's system. To better distribute the draft from this portion of the aquifer, DWS has developed new wells to replace its use of Shaft 33. The wells are the Iao Well, Waikapu Well, and the recently completed Wailuku Well No. 1 and Wailuku Well No. 2. Shaft 33 is now shut down and is in the process of being closed and sealed.

In addition to these groundwater wells, DWS is currently constructing the new Iao Water Treatment Plant (WTP), which will replace the existing Iao WTP. The average day production rate of the new Iao WTP will be 3.2 mgd. The new Iao WTP will treat surface water from the Iao-Waikapu Ditch, which is the current water source for the existing Iao WTP. The treated water from the WTP will be conveyed to DWS's existing 3.0 MG Iao Reservoir, which also supplies water to DWS's central Maui water system.

If a new water source is required, the recommendation would be to drill new wells in the Waihee Aquifer since current groundwater withdrawal from the Iao Aquifer is close to the sustainable yield. DWS has five wells that currently pump from the Waihee Aquifer, which are the Kupaa Well, Kanoa Well Nos. 1 and 2 and the North Waihee Well Nos. 1 and 2. (See Exhibit 7, Existing Wells and Tanks in the Waihee Aquifer.)

Tom Nance Water Resource Engineering (TNWRE) recommends drilling up to three new wells in the Waihee Aquifer. Use of the new wells could bring the total draft from the Waihee Aquifer close to the sustainable yield of the Waihee Aquifer, which is 8 mgd.

The wells could be drilled on State-owned land designated as TMK: 2-3-1-001:001. (See Exhibit 8, Existing and Potential Wells and Tanks in the Waihee Aquifer.) The wells would be located at an approximate elevation of 760 mean sea level (msl), which is about 120 feet higher than the Kupaa Well and 0.5 MG Tank.

Two options for locating a new storage tank to provide storage of the well water are being considered. Option 1 would be to construct a new tank near the new wells in State-owned land at the same elevation of the Kupaa Tank, which is at elevation 640 feet msl, so that the tanks would "float" with each other. Option 2 would be to construct a new tank next to the Kupaa Tank, but this option would require obtaining land from the property owner.

DLNR will continue its coordination with DWS to further define source requirements for the DLNR Industrial and Business Park.

c. Water Storage

DWS noted that the Waihee Tank is unable to support even the proposed DOFAW project. Ordinarily, a new water storage tank would be required for the DOFAW project. However, stagnation in the tank would be a concern since the average day demand of 27,300 gpd is significantly smaller than DWS's minimum allowable tank size of 100,000 gallons. Therefore, DWS is willing to provide water to the DOFAW project without the need to construct a storage tank. However, this postponement is only being provided to the DOFAW project, and development of the DLNR Industrial and Business Park would require construction of a storage tank.

The new storage tank would be sized to meet the maximum day demand of the entire DLNR Industrial and Business Park, including the DOFAW site. To meet the requirements of Demand 1 (refer to Table 3), the tank would need to be approximately 1.0 MG. To meet the requirements of Demand 2, the tank would need to be approximately 2.0 MG

The tank should be located to provide the best opportunity for integrating the tank into DWS's existing water system. Some of the criteria for locating the tank are as follows:

Land ownership: Preferably, the tank would be located on land owned by the State or the County of Maui. Otherwise, land would need to be purchased or leased. An area of about two to four acres would be required to accommodate a tank site, including grading.

Elevation: The tank should be located at a minimum elevation of about 260 feet, to fit into DWS's existing water system, and to be

able to service a reasonable number of users. The optimum location would be at an elevation above 480 feet, such that the tank could supply water to the existing 36-inch C.M.W.T.S. waterline.

Location: The tank should be located to minimize the amount of new transmission waterline required to connect the new tank to DWS's distribution system or to the 36-inch C.M.W.T.S. waterline.

A meeting was held with DWS on December 20, 2017 to discuss possible tank site locations to provide additional storage of water. DWS's preferred location is adjacent to the existing 1.0 MG Waihee Tank, which is at an approximate elevation of 485 feet. There is a small area near the existing Waihee Tank that may be able to accommodate a 1.0 MG tank, perhaps with the use of retaining walls. If it is determined that a new tank adjacent to the existing tank is not feasible, then, an easement, or land acquisition, for a tank site nearby would be required.

There are two land owners that surround the Waihee tank site. The lot to the east of the tank – TMK 2-3-2-017-037 – slopes downwards, and would be too low to allow the existing and the new tank to be at the same elevation, allowing them to hydraulically "float" with each other. The lot to the east of the Waihee tank site – TMK 2-3-2-017-018 – has a variable topography, with several possible options for a tank that could be located around an elevation of 485 feet. There are several structures and developed areas within this lot that would need to be taken into consideration when locating the tank.

The advantage of this alternative is that the new tank would be located near the source for the 36" C.M.W.T.S. waterline, and no additional transmission main would be required to connect to the 36" waterline. However, there would need to be a new waterline between the existing tank and the new tank to connect them.

Consideration was also given to locating a tank adjacent to the existing 3.0 MG Iao Tank, or at the existing Iao Tank site. These two locations are feasible, but were determined to be less desirable than locating the tank at the Waihee Tank site.

Several other locations, including locating a new tank near the existing 300,000-gallon Waikapu Tank on Waiko Road, or near the existing mid-level Kehalani Mauka Tank, were discussed, but were not deemed to be viable at this time.

As discussed previously, if new wells are to be drilled in the Waihee Aquifer, two options for providing for additional storage are being considered. Consideration could be given to constructing two new storage tanks, e.g., one tank at the 1.0 MG Waihee Tank site and one near where any new wells are drilled.

d. Transmission and Distribution System

As noted above, DWS has indicated that a new off-site water storage tank would be required. This off-site tank would be located so as to provide the best opportunity for integrating the tank into DWS's existing water system. The exact location of the new tank is not known at this time, but there will most likely need to be a new transmission line to convey the water from the new tank to a connection point with the existing 36-inch C.M.W.T.S. waterline

The distribution system for the DLNR project would connect to DWS's existing waterlines in the vicinity of the project. The 8-inch waterline in Kamaaina Road would not have enough capacity to provide the peak flow to the project site. A new 12-inch waterline would be adequate to convey the peak flow for Demand 1. The new waterline would likely connect to DWS's existing 12-inch waterline near the intersection of Maui Veterans Highway and Mehameha Loop. The new waterline would be installed in Kamaaina Road to convey the water to the

entrance of the project site. (See Exhibit 9 - Proposed Water System, Alternative 1.)

On-site distribution waterlines would be of ductile iron pipe, and would be located within the project roadways. The waterlines would be sized to provide water for potable, irrigation and fire suppression purposes. The waterlines would also be sized to meet the pressure and velocity requirements of the WSS. Fire hydrants would be installed at a maximum of 250 foot intervals within the site, per the WSS. The maximum fire demand would be 2,000 gallons per minute (gpm), which is applicable for light industry.

Further analysis of the water transmission and distribution system will be undertaken as part of the detailed engineering design process for this project.

3. Proposed Brackish Water System – Alternative 2

For Water Alternative 2, the assumption is that a new private system would supply water to the project areas. The water system would involve treating brackish water from on-site brackish water wells at a new reverse osmosis (RO) brackish water treatment facility (WTF), which would produce potable water. Tom Nance Water Resource Engineering (TNWRE) prepared a memorandum which discusses Alternative 2. (See Appendix D for TNWRE memorandum.) A summary of the memorandum is discussed in the following sections.

a. Water Demand

Since this would be a private system, the water demand does not need to be calculated based on the WSS. The average daily demand (Demand 3) was based on water use at an existing similar commercial/light industrial development in the Waiko area, called Consolidated Baseyard. The average per acre demand for this development in 2016 was approximately 1850 gpd/acre. Therefore, an

average day demand of 2,000 gpd/acre is considered to be reasonable for DLNR Industrial and Business Park. The projected average day water demand for Alternative 2 is calculated to be approximately 447,000 gpd. The projected water demands for Alternative 2 are shown in Table 4.

Table 4. Estimated Water Demands – Demand 3

Description	Demand 3
Area	227 acres
Unit Average Water Demand	2,000 gpd/acre
Total Average Day Water Demand	447,000 gpd
Maximum Day Water Demand	671,000 gpd
Average Day Road and Green Area Irrigation Demand	57,000 gpd
Maximum Day Road and Green Area Irrigation Demand	86,000 gpd
Total Average Day Demand	**504,000 gpd**
Total Maximum Day Demand	**757,000 gpd**

In previous assessments conducted for the proposed project, the private water system was assumed to have separate potable and non-potable waterlines. However, for commercial/light industrial uses, the irrigation demand is expected to be small compared to the total demand. The cost of having a dual system and constructing two sets of waterlines would exceed the cost of treating the amount of water needed for irrigation purposes. Therefore, this report is based on having a single waterline to supply potable water to the lots for both potable and non-potable purposes. The treated water would also be used for fire

protection. However, a separate fire line would be used to supply the water for the fire protection system.

The green and park areas could be irrigated with either potable water, the RO concentrate, or with R-1 Water from an on-site wastewater treatment facility. Initially, at the beginning of the development, R-1 Water flows would be low, and salt tolerant plants would be required for irrigation with RO concentrate. Therefore, to be conservative, the RO WTF would be sized to produce enough potable water for irrigation of the green and park areas, in the event that RO concentrate or R-1 Water cannot be utilized.

b. Water Source

Since the groundwater underlying the project area is not of potable water quality, the source water would be supplied by on-site brackish water wells. The brackish water from the wells would be treated to decrease the chloride concentration to acceptable drinking water levels.

c. Water Treatment

The well water will pass through RO treatment trains that will filter the brackish water to produce drinking water. Based on the anticipated groundwater salinity, approximately 70 percent of the brackish feed water is expected to become potable product. The other 30 percent would be the RO concentrate. The brackish water wells would be sized to produce enough water to meet the maximum day water demand, taking into account the recovery rate by the RO treatment trains and an operating time of 24 hours per day. The potable water would be a blend of RO product water from the RO treatment trains and untreated brackish well water.

The recommendation is to have three brackish water wells each with a capacity of 250 gpm, with the wells spaced approximately 350 feet apart. Each brackish water well would pump to a separate RO treatment train, and each of these well pump and RO treatment trains would produce 175 gpm of blended product water. A fourth well and treatment train, to provide backup capacity, may ultimately be required. However, based on actual use of similar projects on Maui, it is recommended that initial construction be limited to three wells, with provisions for a fourth well at a future time.

The RO WTF would be located at the north end of the project site, abutting the 20-acre DOFAW project site. One brackish water well would be located at the project site, and the other wells would be located on adjacent properties. (See Exhibit 10 - Proposed Water System, Alternative 2.)

The RO Water Treatment Facility (WTF) would consist of a treatment plant building that would house the RO treatment trains and other ancillary equipment, such as the raw water feed pumps, air blowers/compressors, chemical cleaning and disinfection systems, electrical and control panels, etc. The treatment plant building would also likely house the potable water pumps for pumping the treated water into the transmission/distribution system and a fire pump for the fire protection system. (See Exhibit 11 - Water Treatment Facility Process Schematic, Alternative 2.)

d. Potable Water Tank

The recommendation is to have an 800,000 gallon storage tank to store the product water required to meet the maximum day demand of 760,000 gpd. The storage tank would be located within the RO WTF site.) The recommendation is to use a bolted-panel glass-fused-to-steel or stainless steel tank within the RO WTF site.

The storage tank would store the RO product water (treated water) prior to the water entering the distribution system, and would most likely also be used as a chlorine contact tank for disinfection. Since there isn't sufficient elevation difference between the WTF site and the project area to allow for a gravity water system, a booster pump system would be required to pump the treated water from the tank into the potable water distribution system. A separate fire pump would also draw out of the tank and discharge into a separate fire line.

e. Transmission and Distribution System

For Alternative 2, all new transmission and distribution waterlines would be required. There would be separate waterlines for the potable water system, fire system and RO concentrate waterlines. There would also be a brackish waterline to convey the brackish water from the wells to the RO WTF. The potable and fire waterlines would be located within the project roadways and would conform to the requirements of DWS's WSS, and be of ductile iron pipe. Fire hydrants would be installed off the fire waterlines at a maximum of 250-foot intervals within the site.

The brackish waterline and RO concentrate waterlines would be of polyvinyl chloride (PVC) or high density polyethylene (HDPE) pipes.

Further analysis of the water transmission and distribution system will be undertaken as part of the engineering design process for this project.

f. RO Concentrate Disposal

The RO concentrate from the RO treatment process could be used for irrigation of salt-tolerant landscaping in common areas, or at an off-site location. A backup method of disposal would be required for disposal of the RO concentrate in the event that the concentrate cannot be used for irrigation, e.g., during rainy periods. The preferred backup

disposal method would be to utilize disposal wells. Two disposal wells would be needed, one for back up. The wells should be located a minimum of 1,320 feet from the brackish water supply wells, and downgradient from the supply wells to the south. One possible location for the wells would be in the park area at the south of the project area. The RO concentrate production rate would be 75 gpm, which is equivalent to 108,000 gpd.

The RO concentrate would be discharged into the groundwater at a depth at which the salinity of the groundwater is of equal or greater salinity than the RO concentrate. Therefore, disposal of the concentrate should not adversely impact the receiving groundwater.

4. Proposed Surface Water System – Alternative 3

For Water Alternative 3, the assumption is that a new private system would supply water to the project areas. The water system would involve treating surface water from East Maui Irrigation Company, Ltd. (EMI's) ditch system at a new water treatment facility (WTF) to produce potable water.

a. Water Demand

As with Alternative 2, the private system water demand would be Demand 3, which is approximately 500,000 gpd, based on a lot demand of 2,000 gpd/acre, and the irrigation demands for the roads and green areas. Also, as with Alternative 2, there would be a single water system in which the treated water would be used for both potable and non-potable purposes.

b. Water Source

With the cessation of sugar cane cultivation on Maui, the assumption is that water previously used for irrigation may be available for other uses, such as drinking water. The DLNR proposes to utilize

surface water from the existing agricultural irrigation system as one of its alternatives for potable and non-potable water.

The existing irrigation system is sourced from the diversions by EMI and originates from streams in East Maui. Pursuant to an agreement executed March 18, 1938, EMI, in consideration for the right to convey and divert water for their uses, granted to the Territory of Hawaii a perpetual right and easement to jointly convey and divert water for the Territory's use. Successor to the agreement is the State of Hawai'i. As such, the DLNR has informed the Commission on Water Resource Management their intent to utilize approximately 3.0 mgd of water for approximately 600 acres in Pulehunui, including the approximate 280 acres of this project. It is noted that while the DLNR owns approximately 600 acres at Pulehunui, the only development envisioned at this time is the 280-acre subject project. There are no current plans for development on the remaining 320 acres of land.

The closest EMI ditch to the project area is the Haiku Ditch, which runs just above the project area at an approximate elevation of 140 feet mean sea level (msl). The Haiku Ditch discharges into HC&S Reservoir 90, just above the project site. (Refer to Exhibit 2.). EMI has three other ditches that increase in elevation up the slopes of Haleakala. The next higher ditch is the Lowrie Ditch, at an approximate elevation of 340 feet. The next higher ditch is the Kauhikoa Ditch, at an approximate elevation of 770 feet msl, and the highest ditch is the Hamakua Ditch at an approximate elevation of 1060 feet msl.

The recommendation is to construct a new ditch intake that would divert water from the Haiku Ditch to the project site, before the ditch discharges into HC&S Reservoir 90. Screening at the ditch intake would remove large debris, such as leaves and twig, from the raw water. A new raw water storage reservoir, which would be used just for the WTF, would be located below HC&S Reservoir 90, at the top of the project area. The

reservoir would act as a sedimentation reservoir for settlement of solids prior to the water being treated at the WTF. The reservoir would also act as an equalization reservoir to help reduce the effects of low flows in the Haiku Ditch. The recommendation is to install a floating cover on the reservoir to eliminate evaporation from the reservoir and prevent algal blooms.

The water would flow by gravity from the Haiku Ditch through the ditch intake to the raw water reservoir, and then by gravity to the WTF. The reservoir would be at an approximate ground elevation of 126 feet msl.

Although diverting water from Haiku Ditch is preferred due to its proximity to the project site, further investigation may determine that obtaining water from one of the higher ditches may be more desirable. For example, the raw water in another ditch may prove to be of better quality than in the Haiku Ditch, or of a more consistent quantity. If it is determined that water from a ditch other than the Haiku Ditch should be used, the expectation is that the water from the ditch would still be conveyed to a WTF located within the project site.

At this point, the quality and quantity of the water in the Haiku Ditch is unknown. However, the indication from recent discussions with HC&S is that the flows in the Haiku Ditch will probably not be at a consistent or high enough flow to sustain a reliable WTF.

c. Transmission and Distribution System

All new transmission and distribution waterlines would be required. There would be separate waterlines for the potable water system and fire system. There would also be a raw waterline to convey the surface water to the WTF. All the waterlines would be located within the project roadways. The potable and fire waterlines would conform to the requirements of DWS's WSS, and be of ductile iron (D.I.) pipe. Fire

hydrants would be installed off the fire waterlines at a maximum of 250-foot intervals within the site.

The raw waterline material would be of polyvinyl chloride (PVC), high density polyethylene (HDPE) or D.I. (See Exhibit 12 - Proposed Water System, Alternative 3.)

Further analysis of the water transmission and distribution system will be undertaken as part of the engineering design process for this project.

d. Surface Water Treatment Facility

The recommendation is to construct a WTF that utilizes membrane filtration for treatment of the raw water. The WTF would be located at an approximate elevation of 94 feet msl. The elevation difference between the raw water reservoir and the WTF would be approximately 32 feet.

There are two general types of membrane systems – pressure systems and submerged systems. Pressure systems typically require a feed pressure of 30 to 35 pounds per square inch (psi). Submerged systems do not require a feed pressure, since the raw water enters tanks open to atmosphere. With a submerged system, permeate pumps are used to "draw" the water through the membrane unit.

Consideration should be given to both types of membrane systems. However, since there is not enough elevation difference between the raw water reservoir and the WTF site to provide 30 to 35 psi of feed pressure, feed pumps would be required with a pressure system. Another option may be to divert water from a higher ditch, such as the Lowrie Ditch, and construct the raw water reservoir off-site at a higher elevation. A higher reservoir would provide enough elevation difference such that the raw water could flow by gravity from the reservoir to the

WTF and have enough pressure to pass through the membrane pressure system without the need for feed pumps. However, this option would require obtaining land, or an easement, for the off-site raw water reservoir. Therefore, this option is not pursued further in this report.

The membrane system would be located within a new building, which would house the membrane filters and other ancillary equipment, such as raw water strainers, pumps, air blowers/compressors, chemical cleaning and disinfection systems, electrical and control panels, etc. The WTF Building would also house the potable water pumps for pumping the treated water into the transmission/distribution system, and a fire pump for the fire protection system. (See Exhibit 13 - Water Treatment Facility Process Schematic, Alternative 3.) Approximately four to five acres of land is expected to be required for the WTF.

e. Potable Water Tank

The recommendation is to use a bolted-panel steel tank for storage of potable water within the WTF site. The material could be glass-fused-to-steel, epoxy-coated steel or stainless steel. The tank would most likely be used as a chlorine contact tank for disinfection of the water, as well as for storage of the product water (treated water) prior to the water entering the distribution system. Since there isn't sufficient elevation difference between the WTF site and the project area to allow for a gravity water system, a booster pump system would be required to pump the treated water from the tank into the potable water distribution system. A separate fire pump would also draw out of the tank and discharge into a separate fire line.

f. Sludge Lagoon

A dual-compartment concrete sludge lagoon would be used for gravity solids-liquid separation of backwash water from the membrane units. Drain water from raw water strainers and neutralized chemicals

used for cleaning the membranes would also be conveyed to the sludge lagoon. One compartment would be shut-down at a time to allow for gravity settlement of the sludge. After settlement, the liquid would be decanted, and the sludge would then be allowed to dry via evaporation. When the sludge dries to a solids content of approximately 35 percent, the dried sludge would be removed from the compartment and transported for off-site disposal at the County of Maui landfill.

The decanted liquid could possibly be used directly for irrigation, or the decant could also be recycled back to the start of the water treatment process.

5. Preferred Water System Alternative

While Water Alternative 1, which involves connecting to the DWS's water system, is considered to be the most cost effective alternative, it is also the alternative having the greatest uncertainty with respect to implementation timeframes. A new off-site storage tank would be required at the DWS's preferred site located adjacent to the existing Waihee Tank Site (CMWTS Tank Site). The process of confirming the viability of this off-site storage tank location for DLNR's Industrial and Business Park project requires further coordination, including land acquisition and definition of preliminary engineering basis of design. In addition, if a new off-site water source needs to be developed, then a location for the source and how the water will be put into DWS's system needs to be determined. Coordination will be ongoing with the DWS to define legal and engineering design criteria.

In parallel to addressing storage requirements, source adequacy and technical requirements will need to be defined with the DWS. At this time, the DWS' new administrative rules, effective January 29, 2018, indicates that source may be a limitation with respect to servicing the entire project area (i.e., source may be available for only a portion of the total project). The DLNR will continue its coordination with the DWS to further define source requirements for the

Industrial and Business Park project. Nonetheless, source uncertainty creates a degree of risk which may not be favorable for the project.

Thus, while Alternative 1 is considered operationally viable, reliance on this option may not be considered prudent given the uncertainties associated with land acquisition and source requirements.

While the costs of Alternative 2 and Alternative 3 are about 1.5 to 2 times higher than Alternative 1, with an accompanying operational and maintenance cost component, these alternatives will place control of the provision of water with the DLNR.

As mentioned previously, the indication from recent discussions with HC&S is that the flows in the Haiku Ditch will probably not be at a consistent or high enough flow to sustain a reliable WTF. Therefore, the proposed surface water system (Alternative 3) is less desirable than the proposed brackish water system (Alternative 2.)

All three alternatives have the potential for future collaboration opportunities with other agencies having an interest in the Pulehunui region, namely, the State Department of Hawaiian Home Lands (DHHL) and the State Department of Accounting and General Services/Department of Public Safety (PSD). Such collaborative efforts would help to bring economies of scale to the development of a water system for the DLNR and other agencies (State and County) to utilize lands at Pulehunui in optimum fashion.

DHHL has prepared a draft regional infrastructure master plan (Regional Study) which evaluates infrastructure improvements to serve DHHL's projects in the vicinity (North and South Pulehunui), and the PSD project, as well as this DLNR Industrial and Business Park project. DHHL is exploring options for supplying water to the region. Presently, DHHL's preferred water alternative may be to connect to the DWS's water system, which is similar to Alternative 1. If DHHL were to pursue connecting to DWS's water system, this alternative would

require resolution with DWS regarding development of additional source water and storage requirements.

I. PROPOSED WASTEWATER SYSTEM

Four alternatives for treatment of the wastewater generated by the project have been considered. Wastewater Alternative 1 would be to convey the wastewater to the existing Wailuku-Kahului Wastewater Reclamation Facility (WWRF) for treatment. Wastewater Alternative 2 would be to convey the wastewater to the existing Kihei WWRF. Wastewater Alternative 3 would be to treat the wastewater at an on-site WWRF, , and Wastewater Alternative 4 would be to convey the wastewater to the future Central Maui WWRF.

1. Wailuku-Kahului WWRF – Alternative 1:

The Wailuku-Kahului (W-K) WWRF is approximately six miles north of the project area. The design capacity of this WWRF is 7.9 million gallons per day (mgd). In prior discussions with the County of Maui Wastewater Reclamation Division (WRD), they stated that the W-K WWRF is near capacity, and that treatment capacity is allocated on a first come first served basis with multiple requests already in place for capacity allocation. WRD has concluded that they do not plan on expanding the capacity of the W-K WWRF due to issues associated with the location of this WWRF being adjacent to the shoreline within a coastal flood zone.

Conveying the wastewater generated by the DLNR Industrial and Business Park project to the W-K WWRF would require at least one new wastewater pump station and three to six miles of new transmission lines. Therefore, due to the uncertainty of whether wastewater could be treated at the W-K WWRF, and the cost of conveying the wastewater to this WWRF, Alternative 1 was not pursued further.

2. Kihei WWRF – Alternative 2:

The Kihei WWRF, which produces R-1 water, is located approximately six miles south of the project area in Kihei. The Kihei WWRF serves the South Maui area from Wailea to Sugar Beach. The design capacity of the Kihei WWRF is 8.0 mgd. WRD indicated during recent conversations that the average dry weather wastewater flow to the Kihei WWRF was 4.9 mgd. However, WRD further stated that 7.0 mgd has already been allocated to permitted /infill projects. With 87% of the design capacity of the WWRF already allocated, this facility may not be able to accommodate the wastewater flows from the DLNR Industrial and Business Park project. Available wastewater capacity will depend upon the number of permitted projects to be developed prior to the completion of the DLNR Industrial and Business Park project. Flow to the facility will be allowed on a first come first serve basis.

The Kihei District wastewater collection system consists of ten wastewater pump stations (WWPSs). Five of these WWPSs are used to pump, in series, wastewater generated north of the Kihei WWRF to this WWRF. Therefore, if the wastewater from the DLNR Industrial and Business Park project was to be pumped to the closest existing Kihei WWPS to the project, which is the first WWPS in the series (Kihei No. 2 WWPS), then the other four downstream WWPSs (Kihei No. 3, No. 4, No. 5 and No.6 WWPSs) would also be impacted by the project flows.

WRD has recently hired a consultant to prepare a study to look at alternative alignments for a transmission system to convey wastewater from the northern part of Kihei, near Ohukai Road, to the Kihei WWRF. Two of WRD's preferred options under consideration are:

Option A - Upgrading the collection system along South Kihei Road – This option consists of replacing/upsizing approximately 11,000 lineal feet of gravity sewer/force main lines along with upsizing four existing pump stations.

Option B - Adding a new collection system on Liloa Drive – This option consists of adding gravity sewer/force main lines and two pump stations through Liloa Drive. This new line would intercept and transport flows generated from mauka areas directly to the Kihei WWRF. This would help to alleviate the overtaxed wastewater system on South Kihei Road.

Construction is tentatively scheduled for 2021; however the start date may be a few years later, depending on actual flows in the system and the selected alignment. The DLNR Industrial and Business Park is expected to start construction in 2022.

If WRD constructs a new transmission system, or upgrades the existing system, then the flows from the project area could possibly be conveyed from the project site to the north end of Kihei to connect with WRD's new system. Alternative 2A would be in conjunction with WRD's Option A and would involve connecting to the existing Kihei No. 2 Pump Station. Alternative 2B would be in conjunction with WRD's Option B, and would involve connecting to a manhole near the intersection of Ohukai Road and Piilani Highway. (See Exhibit 14, Proposed Wastewater System Alternative 2.)

A new WWPS within the DLNR Industrial and Business Park project site, and a new force main would be installed to convey the wastewater all the way to the proposed alternative connection locations. The force main distance for Alternative 2A is approximately 15,800 feet from the project site to the Kihei No. 2 Pump Station. The force main distance for Alternative 2B is approximately 19,800 feet from the project site to the intersection of Ohukai Road and Piilani Highway. Since the force main would mostly likely be within the Right-of-Way of Maui Veterans Highway, these alternatives would require involvement with the State of Hawaii Department of Transportation (DOT). A "Use and Occupancy Agreement" would probably need to be obtained from DOT, which can be a long process.

WRD recently provided comments on the Draft Environmental Impact Statement prepared for this project. WRD's comments were that the DLNR

Industrial and Business Park project is currently outside of the Kihei and Wailuku-Kahului sewage service areas, and that their existing wastewater infrastructure does not have the capacity to provide service for the project. Based on these comments, this alternative may not be feasible.

3. On-Site WWRF – Alternative 3:

Wastewater Alternative 3 would involve treating the wastewater generated by the project at an on-site wastewater reclamation facility (WWRF). The proposed location for a new WWRF is next to the proposed water treatment facility (WTF) site for water system Alternative 3. (Note: A WTF would not be needed for water system Alternative 1, which involves connecting to DWS's water system) (See Exhibit 15 - Proposed Wastewater System Alternative 3.)

a. Wastewater Flows

Typically, preliminary wastewater contributions are determined based on WRD's Wastewater Flow Standards. For industrial/commercial properties, the wastewater contribution is based on the type of use of the lot (e.g., industrial shop) and the number of employees per square foot of floor area. WRD published "Wastewater Flow Standards" in 2006, based on types of use. The following criteria were used to determine the estimated wastewater generated by the project site.

Light Industrial (70% of development)

Industrial Shop Contribution:	25 gpd/employee
Storage/Industrial Employees:	1 per 500 square feet of floor area
Building Area (assumed):	17,424 sf per acre

Commercial/Business (30% of development)

Storage with offices Contribution:	15 gpd/employee
Retail Warehouse Employees:	1 per 350 square feet of floor area

Building Area (assumed): 17,424 sf per acre

The design average flow is calculated to be approximately 230,000 gpd. (See Appendix E for projected wastewater flow calculations.)

b. Wastewater Reclamation Facility

The WWRF capacity was determined by increasing the projected design average wastewater flow of 230,000 gpd by about 20 percent, to 275,000 gpd, to allow for variations in land use development. Flow equalization would be provided to reduce the design maximum flow to acceptable flow through the WWRF. The WWRF would be designed to produce R-1 Water, in accordance with the State of Hawaii Department of Health (DOH) "Reuse Guidelines", November 2015. This would allow for spray irrigation reuse with minimal restrictions. Approximately four to five acres of land is expected to be required for the WWRF. The WWRF treatment process would include the following:

- Headworks – involves screening equipment that removes large debris from the wastewater flow stream to prevent damaging to the equipment further down the process and flow monitoring.
- Equalization Tank – Allows stabilizing the incoming wastewater flows by absorbing and storing the peak flows in a basin. Incorporating an equalization tank allows for a design and construction of a smaller wastewater facility which translates to lower capital costs.
- Biological Tanks – This is where the microorganisms consume the organics in the incoming wastewater.

- Membrane Tanks or Filters – Semi permeable membranes are used to filter the waste stream from the biological tanks creating a "clear" effluent.

- Ultraviolet Channel – The effluent from the membrane tanks pass thru a channel lined with ultraviolet submersed bulbs to render any pathogens harmless.

- Solids Processing Facility – Sludge created from the biological process will be stabilized through an aerobic digester then dewatered and finally be hauled to a landfill for disposal.

- Operations Building – This building will contain the laboratory, offices, the motor control center for all electrical equipment, maintenance/storage area and restroom facilities.

An R-1 Water storage tank would be located at the WWRF site to store a little more than one day's worth of R-1 Water. R-1 Water would be drawn out of this tank and pumped into the reuse system.

In the event that there is an upset in the treatment process, and the effluent does not meet R-1 Water standards, the non-compliant water would be stored in a separate on-site storage tank. The non-compliant water would then be gradually pumped to the headworks of the WWRF for re-treatment. (See Exhibit 16 - Wastewater Treatment Facility Process Schematic Alternative 3.)

c. Wastewater Collection System

An on-site wastewater system would be installed to provide wastewater collection service to all proposed lots. The majority of the wastewater from the project areas can flow by gravity directly to the WWRF. However, wastewater from properties with elevations below about 100 feet msl would be conveyed by gravity to a wastewater pump

station (WWPS) located in the park area. The wastewater would then be pumped, via a force main, to the WWRF.

The gravity lines for the wastewater collection system and the force main would be sized to convey the peak flow to the WWRF, and would be of PVC.

d. Effluent Reuse/Disposal

The WWRF would produce R-1 Water quality effluent, which allows for spray irrigation reuse with minimal restrictions. Although using the R-1 Water for irrigation of commercial and industrial parcels is allowed by the Department of Health, doing so would require more stringent monitoring procedures. Therefore, the assumption for this study is that potable water would be used for the lots. The R-1 Water could be used for common landscape areas and buffer areas.

Irrigation application rates can vary from a conservative rate of 0.125 inch per day to up to 1.0 inch per day. The University of Hawaii, College of Tropical Agriculture and Human Resources reports indicate that turf grass should receive between 0.75 to 1 inch of water (20,400 27,200 gpd/acre) every two to three days depending where the property is located. The DLNR Industrial and Business Park is located on the drier side of Maui, where rainfall averages about 13 inches/year. The required areas for disposal of the effluent for the conservative rate of 0.125 inch per day would be approximately 81 acres, based on the WWRF producing 275,000 gpd of effluent. At a more typical application rate of 0.50 inch per day, the required area would be approximately 20 acres.

The estimated irrigated area for the green space and parks is approximately 24 acres. The expectation is that all of the effluent produced by the WWRF would be used for irrigation, except during rainy weather. Therefore, it appears as if all of the effluent could be used on-site. However, consideration should be given to also looking at off-site

areas that can utilize the effluent for irrigation, e.g., open spaces, pastures, and agricultural land. There was previously sugar cane cultivation in the area, but the cultivation has ceased with the closure of HC&S. The Department of Hawaiian Home Lands (DHHL) Maui Island Plan (2004) designates the majority of a nearby 646-acre parcel (Lot 34 in Exhibit 1) for General agricultural uses which may generate irrigation demand for R-1 water reuse.

e. Backup Effluent Disposal

A backup system of effluent retention/disposal would be required to address periods of rainy weather when irrigation should not occur. The recommendation is to use a soil aquifer treatment system (SAT) to dispose of any excess R-1 Water. The SAT would be sized based upon infiltration tests prior to design. The proposed SAT would be a bermed, aboveground single unit. Application rates for surface percolation vary considerably, depending on the type of soil. Typical application rates can range from as low as 1.2 gpd/sf to as high as 8.0 gpd/sf. Ideally, the SAT would be located at a site with very well drained soils, to maximize the hydraulic application rate.

A SAT that is approximately 2 acres could be located on-site at the WWRF. Based on the average daily effluent flow of 275,000 gpd from the WWRF, the application rate would need to be approximately 3 gpd/sf, which is a fairly conservative rate. This application rate would include a safety factor for future binding of the soil matrix. However, if future soils tests determine that the application rate needs to be less than 3 gpd/sf, then additional land for the SAT would be required. Further analysis of the wastewater treatment and disposal system will be undertaken as part of the engineering design process for this project.

4. New County WWRF – Alternative 4

Alternative 4 would involve conveying the wastewater from the DLNR Industrial and Business Park to a proposed County WWRF located along Kuihelani Highway. The proposed WWRF is referred to as the "Central Maui WWRF" and is located approximately 2 miles west of the project. Two WWPSs would be required to pump the wastewater from the project to the County WWRF. WWPS No. 1 would pump the wastewater north along Maui Veterans Highway to the north end of TMK (2) 3-8-005-002, and then west part way along Waiko Road. WWPS No. 2 would pump the wastewater to Kuihelani Highway, and then south along the highway to the WWRF. (See Exhibit 17, Proposed Wastewater System Alternative 4.) An easement would need to be obtained from Alexander and Baldwin, LLC for the force main along Waiko Road, which is privately owned between Kuihelani Highway and Maui Veterans Highway.

WRD is proposing to commence obtaining funds and starting the entitlement/design process of this treatment facility. However, the status of the new Central Maui WWRF is still in its preliminary stages and construction of the facility is anticipated to be completed in 2025. This completion date is later than the DLNR Industrial and Business Park's expected start of construction, which is 2022. An interim treatment system could be designed and constructed to treat initial flows from the project until the Central Maui WWRF is operational. An interim design would consist of the following:

- A temporary WWRF would be constructed in the same location as the WWRF for Wastewater Alterative 3. A temporary SAT system for disposal of the effluent would be constructed.

- WWPS No. 1, which would convey the wastewater flows to the temporary WWRF. This WWPS would be designed to be able to pump the wastewater flows to WWPS No. 2 in the future.

The DLNR Industrial and Business Park is expected to start construction in 2022, with 7 to 8 lots being leased per year between 2024 and 2033.

Assuming that the Central Maui WWRF could be delayed by a couple of years, the temporary treatment plant should be sized to treat the wastewater from lots developed over the first three or four years. The expected design average wastewater flow would be between 50,000 gpd and 70,000 gpd.

The cost of this alternative is based on the cost of pumping the wastewater to the Central Maui WWRF and a pro-rata share of the cost of the WWRF. Since the timing of the WWRF is unknown at this time, the cost also includes the temporary force main, treatment plant and disposal system. The cost for this wastewater alternative is the highest of all the alternatives.

It is noted that should other State agencies such as DHHL and PSD also connect to the Central Maui WWRF, the cost of improvements to connect to the new County facility could be shared.

5. Preferred Wastewater Alternative

As noted previously, Wastewater Alternative 1, connecting to the Wailuku-Kahului WWRF, is not considered viable due to costs and uncertainty associated with the facility's future (i.e., related to the WWRF's location in the tsunami inundation zone and high probable costs).

While Alternative 2 presents a more cost effective option in terms of initial capital investment, there is a reliance on WRD completing upgrades to the South Kihei transmission system. Such reliance would place the DLNR Industrial and Business Park project at risk, as there is no guarantee that WRD's improvements will be completed within a timeframe aligned with the project development schedule. In addition, WRD has commented that the DLNR Industrial and Business Park project is currently outside of the Kihei and Wailuku-Kahului sewage service areas, and that their existing wastewater infrastructure does not have the capacity to provide service for the project.

The primary advantage of Alternative 4 is that DLNR would not have to privately operate and maintain a WWRF. WRD would operate and maintain this

wastewater treatment facility and WRD is open to the idea of treating wastewater flows from the DLNR Industrial and Business Park project. However, the Central Maui WWRF is not expected to be operational until three or more years from the start of the construction of the project. As with Alternative 2, Alternative 4 most likely would not be completed within a timeframe aligned with the project development schedule. In addition, Alternative 4 is the most costly alternative.

Therefore, selecting Alternative 3, which involves constructing an on-site WWRF facility, is considered to be the prudent measure which would provide the needed assurance for timely project implementation.

It is noted that in addition to the Alternatives discussed herein, the Department of Hawaiian Home Lands (DHHL) has prepared a draft regional infrastructure master plan (Regional Study) for State Lands in the Puunene/Pulehunui area. DHHL's study evaluates infrastructure improvements to serve DHHL's projects in the vicinity (North and South Pulehunui), the State Department of Accounting and General Services/Department of Public Safety project, as well as this DLNR Industrial and Business Park project. DHHL is exploring options for treatment of the wastewater generated by these projects, including construction of a WWRF on state-owned land in the Pulehunui region. If DHHL decides to pursue construction of a regional WWRF, then the WWRF would be designed to accommodate wastewater from the DLNR project. While the DLNR project is assumed to be a stand-alone project, separate from DHHL and PSD projects at Pulehunui, DLNR will continue coordinating with these agencies to consider future options for cooperation in identifying opportunities for joint facility development.

J. SUMMARY

1. Drainage

Increases in stormwater runoff due to the proposed development would be mitigated by the use of detention basins spread throughout the site. Storm drain systems would be installed within the proposed streets and would route

runoff to one of the many detention basins. The basins would either fully retain the runoff or would slowly release it through a low-flow outlet. Overall, the 50-year flow rates are anticipated to be reduced by approximately 35 percent from existing conditions.

In addition to peak flow management, the project would also comply with the County's "Rules for Storm Water Treatment Best Management Practices" by providing water quality treatment. The required Water Quality Design Volume would be fully retained, ensuring that pollutants would be captured and prevented from flowing to downstream areas. Low-Impact Development (LID) practices may also potentially be used for stormwater management including pervious pavement and bioretention basins. Consideration should be given to obtaining permission to utilize uncurbed roadways with dry swales, in lieu of standard curb and gutters.

Maintenance of stormwater detention and water quality Best Management Practices (BMPs) is critical to their continued effective operation over time. A maintenance plan will be developed for managing the BMPs for the future project site. The plan will include requirements for removing accumulated sediments and debris, maintaining vegetation, and performing regular inspections. During construction of the project, the Contractor will utilize BMPs to minimize erosion, sediment runoff, and contamination of the ground and groundwater,

A significant amount of offsite area lies mauka of the project site. Runoff from these offsite areas would be managed with interceptor ditches or through conveyance systems. The offsite runoff would not be detained and would only be passed through in the same location as in the existing condition.

Overall the proposed drainage improvements would comply with applicable rules and regulations from the County of Maui and the State of Hawaii. The project is anticipated to have no adverse effects on adjacent or downstream properties.

2. Water

While connecting to the DWS's water system (Alternative 1) is considered the most cost effective alternative and hence an alternative worthy of continued coordination with the DWS, further work is needed to ensure that storage tank land acquisition issues and definition of engineering basis of design and source requirements can be addressed in a timely manner. For Alternative 1, a new storage tank at the existing Waihee Tank site is viewed as a solution workable for both the DLNR and the DWS. However, uncertainty with regard to when issues relating to land acquisition and source requirements can be resolved, places the DLNR's Industrial and Business Park project at risk.

For Water Alternative 2, a new private brackish water system would supply water to the project areas. Since the groundwater underlying the project area is not of potable water quality, the proposed potable water source for the private system would be from reverse osmosis (RO) treatment of brackish groundwater from wells.

The recommendation is to have three brackish water wells each with a capacity of 250 gpm, with the wells spaced approximately 350 feet apart. The RO water treatment facility (WTF) would be sized to produce the maximum day potable water demand. The RO system would be located within a new building, which would house the RO filters and other ancillary equipment. An 800,000 gallon product water storage tank would be located within the RO WTF site.

The RO concentrate from the RO treatment process could be used for irrigation of salt tolerant plants. A backup method of disposal would be required for disposal of the RO concentrate in the event that the concentrate cannot be used for irrigation, e.g., during rainy periods. The preferred backup disposal method would be to utilize disposal wells. Two disposal wells would be needed, one for back up.

The RO concentrate would be discharge into the groundwater at a depth at which the salinity of the groundwater is of equal or greater salinity than the RO

concentrate. Therefore, disposal of the concentrate should not adversely impact the receiving groundwater.

For Water Alternative 3, a new private surface water system would supply water to the project areas. Surface water from EMI's ditch system would be treated using a membrane filtration process. The WTF would be sized to produce the maximum day potable water demand. The membrane system would be located within a new building, which would house the membrane filters and other ancillary equipment. A potable water storage tank would be located within the WTF site.

Backwash from the membrane units and other waste streams would be sent to a sludge lagoon. The decanted liquid could possibly be used directly for irrigation, or the decant could also be recycled back to the start of the water treatment process. Approximately four to five acres of land is expected to be required for the WTF.

Alternative 3 is considered to be the least desirable alternative based on recent discussions with HC&S which revealed that the reliability and the quantity of surface water in the Haiku Ditch is probably not adequate for operation of a surface water treatment plant.

For both Alternatives 2 and 3, all new transmission and distribution waterlines would be required. There would be separate waterlines for the raw/brackish water system, potable water system and fire system. The potable and fire waterlines would conform to the requirements of DWS's Water System Standards (WSS), and be of ductile iron pipe. Fire hydrants would be installed off the fire waterlines at a maximum of 250-foot intervals within the site.

3. Wastewater

Four alternatives for treatment of the wastewater generated by the project have been considered. Alternative 1 would be to convey the wastewater to the existing Wailuku-Kahului (W-K) Wastewater Reclamation Facility (WWRF) for

treatment. Alternative 2 would be to convey the wastewater to the existing Kihei WWRF. Alternative 3 would be to treat the wastewater at an on-site Wastewater Treatment Facility (WWRF), and Alternative 4 would be to convey the wastewater to the proposed Central Maui WWRF.

Alternative 1 was not pursued due to the uncertainty of the ability of the W-K WWRF to treat the wastewater and the cost involved. Alternative 2 presents a more cost effective option in terms of initial capital investment, but WRD has commented that the DLNR Industrial and Business Park project is currently outside of the Kihei and Wailuku-Kahului sewage service areas, and that their existing wastewater infrastructure does not have the capacity to provide service for the project. WRD has stated that they would recommend that DLNR proceed with Alternative 3.

Alternative 2 and Alternative 4 both rely on the County to construct infrastructure to allow for treatment of the wastewater from the DLNR Industrial and Business Park project. However, the timeframe for the County construction is later than development of the project. Therefore, reliance on the County would place the DLNR Industrial and Business Park project at risk, as there is no guarantee that WRD's improvements would be completed within a timeframe aligned with the project development schedule.

The preferred alternative, Alternative 3, is deemed appropriate in the context of assuring project implementation control (i.e., non-reliance on WRD completing the work required to enable connection to the Kihei WWRF). Alternative 3 would be to construct a new on-site WWRF. The WWRF treatment capacity would be approximately 275,000 gpd. The WWRF would be designed to produce R-1 Water. An R-1 Water storage tank would be located at the WWRF site to store a little more than one day's worth of R-1 Water. R-1 Water would be drawn out of this tank and pumped into the reuse system.

In the event that there is an upset in the treatment process, and the effluent does not meet R-1 Water standards, the non-compliant water would be stored in a separate on-site storage tank. The non-compliant water would then

be gradually pumped to the headworks of the WWRF for re-treatment. Approximately four to five acres of land is expected to be required for the WWRF.

The WWRF would produce R-1 Water quality effluent, which allows for spray irrigation reuse with minimal restrictions. The green and park areas within the project site could be irrigated with the R-1 Water. The expectation is that all of the effluent produced by the WWRF would be used for irrigation, except during rainy weather. Consideration should also be given to finding off-site areas that can utilize the effluent for irrigation (e.g., open spaces, pastures, and agricultural land) may be required.

A backup system of effluent retention/disposal would be required to address periods of rainy weather when irrigation should not occur. The recommendation is to utilize a soil aquifer treatment (SAT) system.

An on-site wastewater system would be installed to provide wastewater collection service to all proposed lots. The majority of the wastewater can flow by gravity to the WWRF. However, wastewater from a portion of the lots would be conveyed by gravity to a wastewater pump station (WWPS), and then pumped to the WWRF.

As mentioned previously, DHHL is exploring options for treatment of the wastewater generated by State Lands in the Puunene/Pulehunui area, including construction of a WWRF on state-owned land in the Pulehunui region. If DHHL decides to pursue construction of a regional WWRF, then the WWRF would be designed to accommodate wastewater from the DLNR project. While the DLNR project is assumed to be a stand-alone project, separate from DHHL and PSD projects at Pulehunui, DLNR will continue coordinating with these agencies to consider future options for cooperation in identifying opportunities for joint facility development. Such collaborative opportunities can create economies of scale which would provide greater cost effectiveness in system development.

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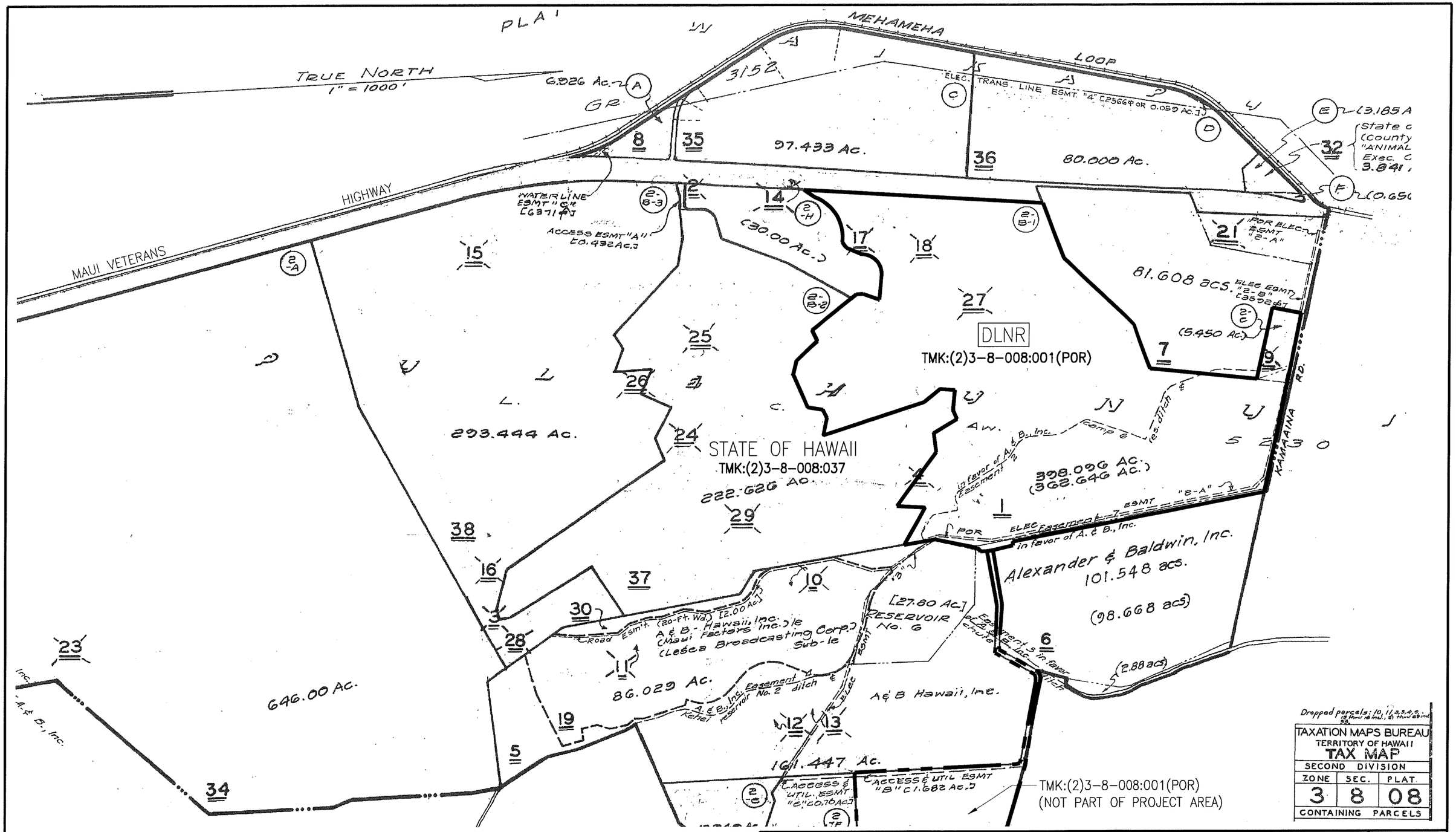
EXHIBITS



PRELIMINARY ENGINEERING AND DRAINAGE REPORT

DLNR INDUSTRIAL AND BUSINESS PARK

PULEHUNUI, MAUI, HAWAII

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS, SURVEYORS • HONOLULU, WAILUKU, HILO, HAWAII

TAX MAP

EXHIBIT 1

JOB NO. M-15-553

DECEMBER 2018

FILENAME: D:\2 - WORK FILES\PROJECT FOLDERS\2015\15-553 - DLNR - KAKANILUA BUSINESS PARK\EXHIBITS\EX 01 - TMK.DWG Dec 14, 2018-9:59 AM



IMAGE © 2013 GOOGLE EARTH

NORTH

AERIAL LOCATION MAP

SCALE: 1" = 1000'

0 1

LINE IS 1 INCH AT FULL SIZE
(If NOT 1-inch : Scale Accordingly)

PRELIMINARY ENGINEERING AND DRAINAGE REPORT

DLNR INDUSTRIAL AND BUSINESS PARK

PULEHUNUI, MAUI, HAWAII

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ENGINEERS, SURVEYORS • HONOLULU, WAILUKU, HILO, HAWAII

AERIAL LOCATION MAP

EXHIBIT 2

DECEMBER 2018

JOB NO. M-15-553

FILENAME: D:\2 - WORK FILES\PROJECT FOLDERS\2015\15-553 - DLNR - KAKANILUA BUSINESS PARK\EXHIBITS\EX 02 - AERIAL LOCATION MAP.DWG Dec 14, 2018-9:59 AM

HC&S RESERVOIR 90

HAWAIIAN CEMENT ACCESS ROAD

IRRIGATION EASEMENT IN FAVOR OF A&B, INC.

DIVISION OF FORESTRY AND WILDLIFE (DOFAW)

SOUTH FIREBREAK ROAD

20 ACRES

KAMAAINA ROAD

MAIN COLLECTOR ROAD

BIKE PATH THROUGH PROJECT

MAUI RACEWAY PARK ACCESS ROAD

NATIONAL GUARD ARMORY

To Kahului

MAUI VETERANS HIGHWAY

To Kihei

FUTURE DHHL COMMERCIAL LANDS

MEHAMEHA LOOP

LOT SIZE SUMMARY

0.5 TO <1	ACRE	18 LOTS
1 TO <3	ACRE	32 LOTS
3 TO <5	ACRE	25 LOTS
>5	ACRE	8 LOTS
TOTAL		83 LOTS

NORTH

PRELIMINARY SITE PLAN

SCALE: 1" = 800'

0 1

LINE IS 1 INCH AT FULL SIZE
(if NOT 1-inch : Scale Accordingly)

PRELIMINARY ENGINEERING AND DRAINAGE REPORT

DLNR INDUSTRIAL AND BUSINESS PARK

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PRELIMINARY SITE PLAN

EXHIBIT 3

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DECEMBER 2018

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RUNOFF SUMMARY – EXISTING CONDITIONS				
DRAINAGE AREA	AREA (AC.)	Q_{50} BEFORE RET. (CFS)	Q_{50} AFTER RET. (CFS)	Q_{100} (CFS)
E1	84.669	64.35	64.35	–
E2	74.498	52.15	52.15	–
E3	115.698	74.05	74..05	–
E4	5.277	7.53	0.00	–
ONSITE TOTAL	280.142	198.08	190.55	–
O–1	806.6	–	–	586.13
O–2	78.097	53.11	53.11	–
O–3	86.954	59.13	59.13	–

NOTES:
1. REFER TO STORMWATER RUNOFF CALCULATIONS FOR ADDITIONAL INFORMATION.

HAIKU DITCH
O–1
O–2
O–3
E1
E2
E3
E4
HC&S RESERVOIR 90
SOUTH FIREBREAK ROAD
CAMP 6 RESERVOIR DITCH
PULEHU GULCH
KAMAAINA ROAD
EXISTING RETENTION BASIN
MAUI RACEWAY PARK ACCESS ROAD
KOLALOA GULCH
OVERLAND FLOW PATH
NATIONAL GUARD ARMORY
EX. 4 X 24" CULVERT
EX. 3 X 24" CULVERT AT RACEWAY PARK DR.
To Kahului
To Kihei
MAUI VETERANS HIGHWAY
EX. 2 X 24" CULVERT
MAUI VETERANS HIGHWAY GRASS SWALES
EX. 2 X 24" CULVERT
FUTURE DHHL COMMERCIAL LANDS
EX. 2 X 24" CULVERT
EX. CULVERT 4: 8 X 12' X 8' BOX CULVERT
MEHAMEHA LOOP
EX. 2 X 24" CULVERT AT MEHAMEHA LOOP.
EX. CULVERT 3: 3 X 12' X 8' BOX CULVERT
DRAINAGE DITCH FROM PULEHU GULCH
DRAINAGE DITCH TO KEALIA POND

NORTH

EXIST. CONDITIONS DRAINAGE AREA MAP

SCALE: 1" = 1000'

0 1
LINE IS 1 INCH AT FULL SIZE
(If NOT 1–inch : Scale Accordingly)

PRELIMINARY ENGINEERING AND DRAINAGE REPORT

DLNR INDUSTRIAL AND BUSINESS PARK

PULEHUNUI, MAUI, HAWAII

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EXISTING CONDITIONS DRAINAGE AREA MAP

EXHIBIT 4

DECEMBER 2018

JOB NO. M–15–553

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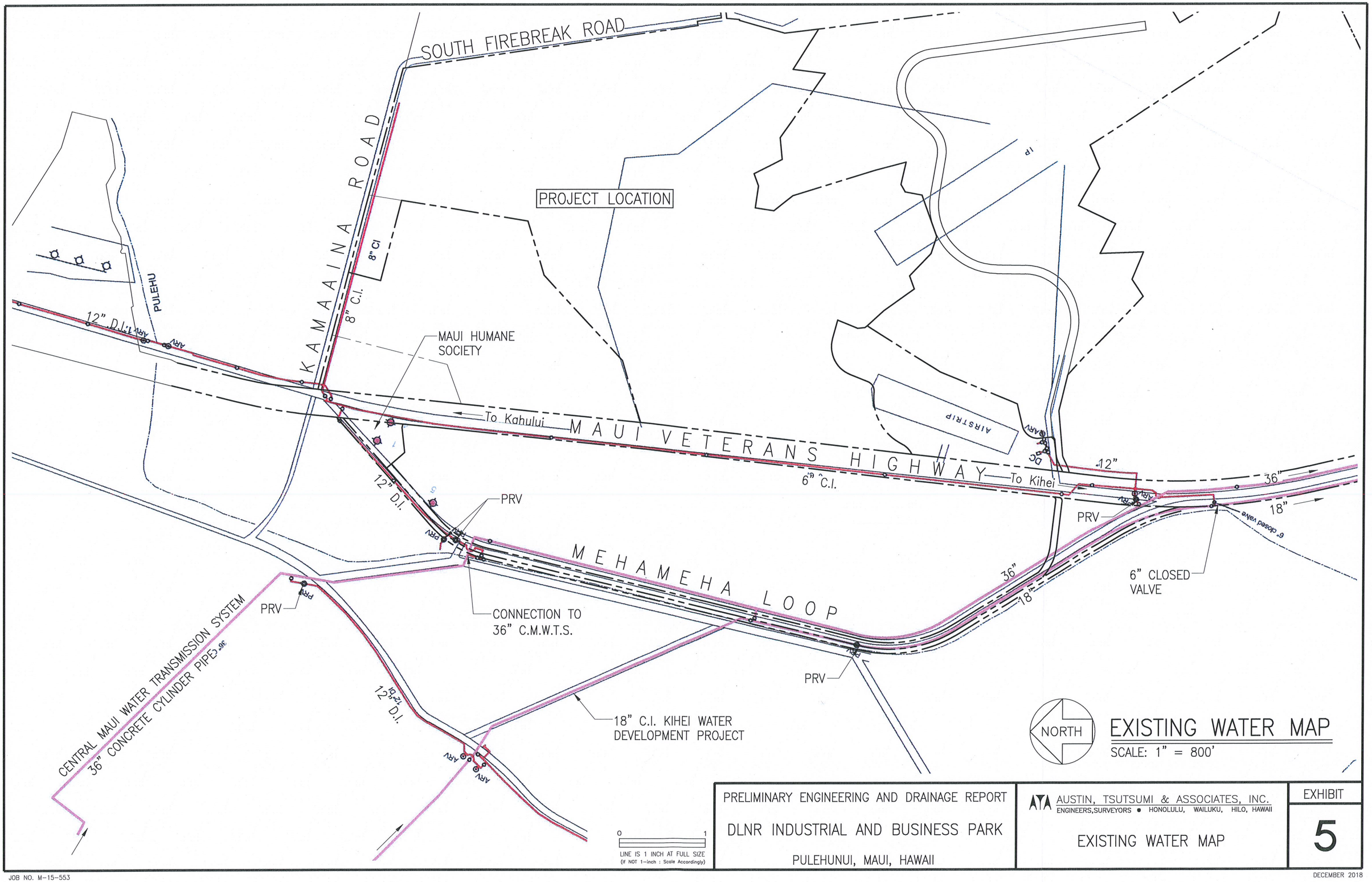

PRELIMINARY ENGINEERING AND DRAINAGE REPORT

DLNR INDUSTRIAL AND BUSINESS PARK

PULEHUNUI, MAUI, HAWAII

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EXISTING WATER MAP

EXHIBIT 5

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JOB NO. M-15-553

DECEMBER 2018

WAIHEE AQUIFER

IAO AQUIFER

NORTH WAIHEE WELL
NOS. 1 AND 2

NORTH WAIHEE 1.0 MG TANK
BOT = 400
TOP = 420

UPPER WAIEHU TANK
ELEV = 546

KAPUNA TANK
ELEV = 323

WAIEHU HEIGHTS TANKS
TOP = 362

WAIHEE TANK
(CMWTS TANK)
TOP = 511.0

0.5 MG KUPAA TANK
AND WELL

KANOA WELL NO. 1

KANOA WELL NO. 2

NORTH

SCALE: 1" = 3000'

0 1
LINE IS 1 INCH AT FULL SIZE
(If NOT 1-inch : Scale Accordingly)

PRELIMINARY ENGINEERING AND DRAINAGE REPORT

DLNR INDUSTRIAL AND BUSINESS PARK

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EXISTING WELLS AND TANKS IN THE WAIHEE AQUIFER

EXHIBIT 6

DECEMBER 2018

FILENAME: D:\2 - WORK FILES\PROJECT FOLDERS\2015\15-553 - DLNR - KAKANILUA BUSINESS PARK\EXHIBITS\EX 06 AND 07 - WAIHEE WELLS.DWG Dec 14, 2018-9:59 AM

JOB NO. M-15-553

TMK: 2-3-2-001:003
WAIHEE SWEETWATER
FARM, LLC

OPTION 1
POTENTIAL 1.5
MG RESERVOIR
ELEV. = 640.0

TMK: 2-3-1-001:001
STATE OF HAWAII

POTENTIAL
WELL SITES

NORTH WAIHEE WELL
NOS. 1 AND 2

OPTION 2
POTENTIAL 1.5
MG RESERVOIR
ELEV. = 640.0

0.5 MG KUPAA TANK
AND WELL

KANOA WELL NO. 1

KANOA WELL NO. 2

NORTH WAIHEE
1.0 MG TANK
BOT = 400
TOP = 420

SCALE: 1" = 1000'

NORTH

0 1
LINE IS 1 INCH AT FULL SIZE
(If NOT 1-inch : Scale Accordingly)

PRELIMINARY ENGINEERING AND DRAINAGE REPORT

DLNR INDUSTRIAL AND BUSINESS PARK

PULEHUNUI, MAUI, HAWAII

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS, SURVEYORS • HONOLULU, WAILUKU, HILO, HAWAII

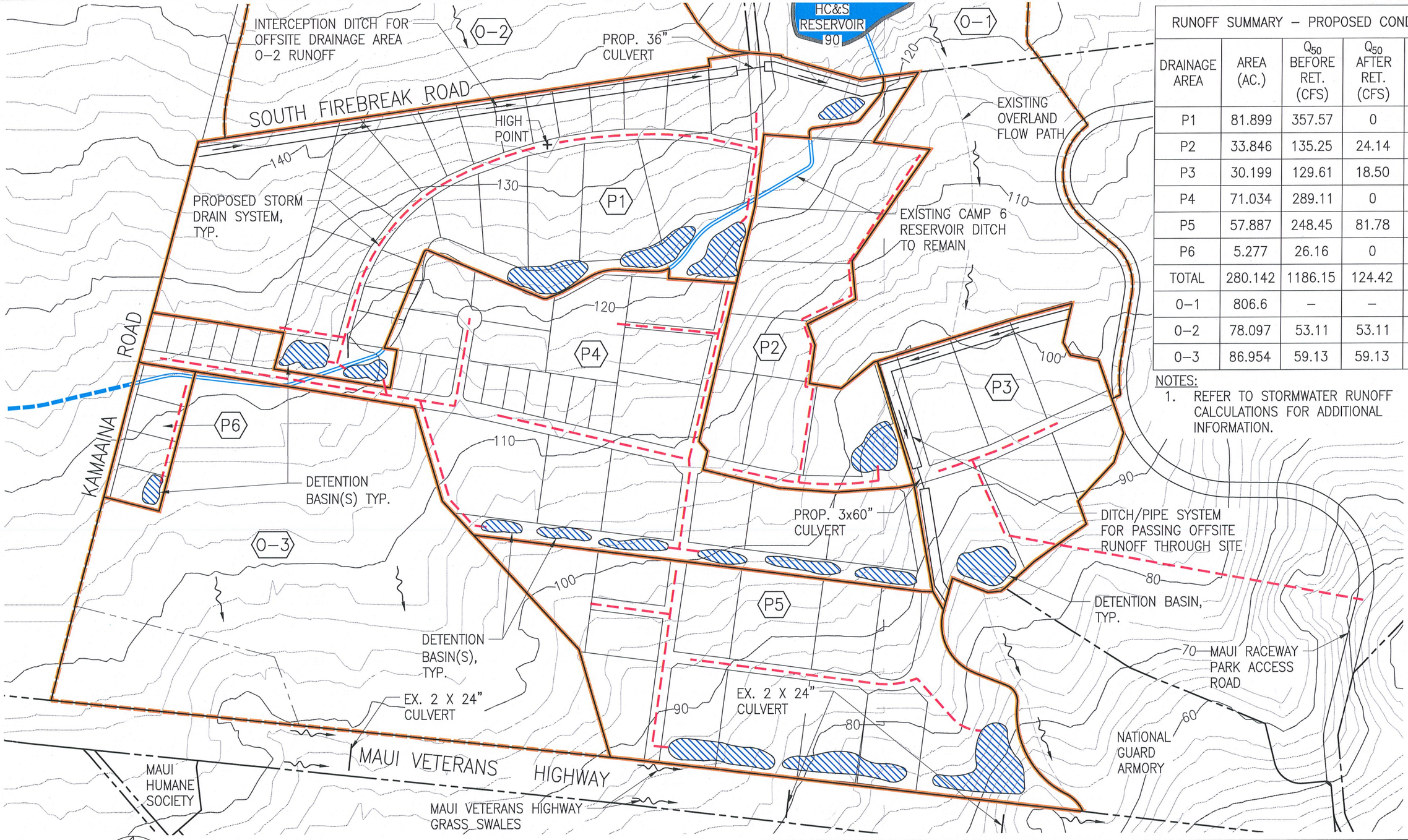
EXISTING AND POTENTIAL WELLS
AND TANKS IN THE WAIHEE AQUIFER

EXHIBIT
7

JOB NO. M-15-553

DECEMBER 2018

FILENAME: D:\2 - WORK FILES\PROJECT FOLDERS\2015\15-553 - DLNR - KAKANILUA BUSINESS PARK\EXHIBITS\EX 06 AND 07 - WAIHEE WELLS.DWG Dec 14, 2018-9:59 AM



RUNOFF SUMMARY – PROPOSED CONDITIONS				
DRAINAGE AREA	AREA (AC.)	Q_{50} BEFORE RET. (CFS)	Q_{50} AFTER RET. (CFS)	Q_{100} (CFS)
P1	81.899	357.57	0	–
P2	33.846	135.25	24.14	–
P3	30.199	129.61	18.50	–
P4	71.034	289.11	0	–
P5	57.887	248.45	81.78	–
P6	5.277	26.16	0	–
TOTAL	280.142	1186.15	124.42	–
0–1	806.6	–	–	586.13
0–2	78.097	53.11	53.11	–
0–3	86.954	59.13	59.13	–

NOTES:

1. REFER TO STORMWATER RUNOFF CALCULATIONS FOR ADDITIONAL INFORMATION.

PROPOSED CONDITIONS DRAINAGE AREA MAP

SCALE: 1" = 500'

0 1

LINE IS 1 INCH AT FULL SIZE
(If NOT 1-inch : Scale Accordingly)

PRELIMINARY ENGINEERING AND DRAINAGE REPORT

DLNR INDUSTRIAL AND BUSINESS PARK

PULEHUNUI, MAUI, HAWAII

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
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PROPOSED CONDITIONS DRAINAGE AREA MAP

EXHIBIT 8

DECEMBER 2018

JOB NO. M-15-553

FILENAME: D:\2 - WORK FILES\PROJECT FOLDERS\2015\15-553 - DLNR - KAKANILUA BUSINESS PARK\EXHIBITS\EX 08 - PROPOSED CONDITIONS MAP.DWG Dec 14, 2018-10:00 AM

SOUTH FIREBREAK ROAD

DOFAW

KAMAAINA ROAD

EW8

CONNECT TO EXIST.
12" WATERLINE

EW6

To Kahului

EW12

MAUI VETERANS HIGHWAY

To Kihei

MAUI RACEWAY PARK ACCESS ROAD

EW12

WASTEWATER ALTERNATIVE 3:
PROPOSED WASTEWATER
TREATMENT FACILITY

LEGEND

POTABLE WATERLINE

EXIST. POTABLE WATERLINE

NORTH

PROPOSED WATER SYSTEM
ALTERNATIVE 1 – DWS SYSTEM

SCALE: 1" = 500'

0 1

LINE IS 1 INCH AT FULL SIZE
(If NOT 1-inch : Scale Accordingly)

PRELIMINARY ENGINEERING AND DRAINAGE REPORT

DLNR INDUSTRIAL AND BUSINESS PARK

PULEHUNUI, MAUI, HAWAII

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
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PROPOSED WATER SYSTEM
ALTERNATIVE 1

EXHIBIT

9

JOB NO. M-15-553

DECEMBER 2018

FILENAME: D:\2 - WORK FILES\PROJECT FOLDERS\2015\15-553 - DLNR - KAKANILUA BUSINESS PARK\EXHIBITS\EX 09 - PROPOSED WATER SYSTEM ALTERNATIVE 1.DWG Dec 14, 2018-10:00 AM



NORTH

PROPOSED WATER SYSTEM
ALTERNATIVE 2 – BRACKISH WATER SYSTEM

SCALE: 1" = 500'

0 1
LINE IS 1 INCH AT FULL SIZE
(If NOT 1-inch : Scale Accordingly)

PRELIMINARY ENGINEERING AND DRAINAGE REPORT

DLNR INDUSTRIAL AND BUSINESS PARK

PULEHUNUI, MAUI, HAWAII

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS, SURVEYORS • HONOLULU, WAILUKU, HILO, HAWAII

PROPOSED WATER SYSTEM
ALTERNATIVE 2

EXHIBIT
10

DECEMBER 2018

JOB NO. M-15-553

FILENAME: D:\2 - WORK FILES\PROJECT FOLDERS\2015\15-553 - DLNR - KAKANILUA BUSINESS PARK\EXHIBITS\EX 10 - PROPOSED WATER SYSTEM - ALTERNATIVE 2.DWG Dec 14, 2018-10:00 AM

BRACKISH WATER WELL

BRACKISH WATER WELL

BRACKISH WATER WELL

BW

BW

PW

REVERSE OSMOSIS SYSTEM

ROC

POTABLE WATER TANK

TREAMTENT PLANT BUILDING

POTABLE WATER PUMPS

FIRE PUMP

ROC

RO CONCENTRATE STORAGE TANK

PW

PW

FW

PW

TO DISTRIBUTION SYSTEM

TO DISTRIBUTION SYSTEM

ROC

TO ON-SITE RO CONCENTRATE IRRIGATION SYSTEM OR DISPOSAL WELLS

LEGEND

- BW — BRACKISH WATER LINE
- FW — FIRE LINE
- PW — POTABLE WATER LINE
- ROC — RO CONCENTRATE WATER LINE

WATER TREATMENT FACILITY PROCESS SCHEMATIC–BRACKISH WATER SYSTEM

NOT TO SCALE

0 1

LINE IS 1 INCH AT FULL SIZE
(If NOT 1-inch : Scale Accordingly)

PRELIMINARY ENGINEERING AND DRAINAGE REPORT

DLNR INDUSTRIAL AND BUSINESS PARK

PULEHUNUI, MAUI, HAWAII

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS, SURVEYORS • HONOLULU, WAILUKU, HILO, HAWAII

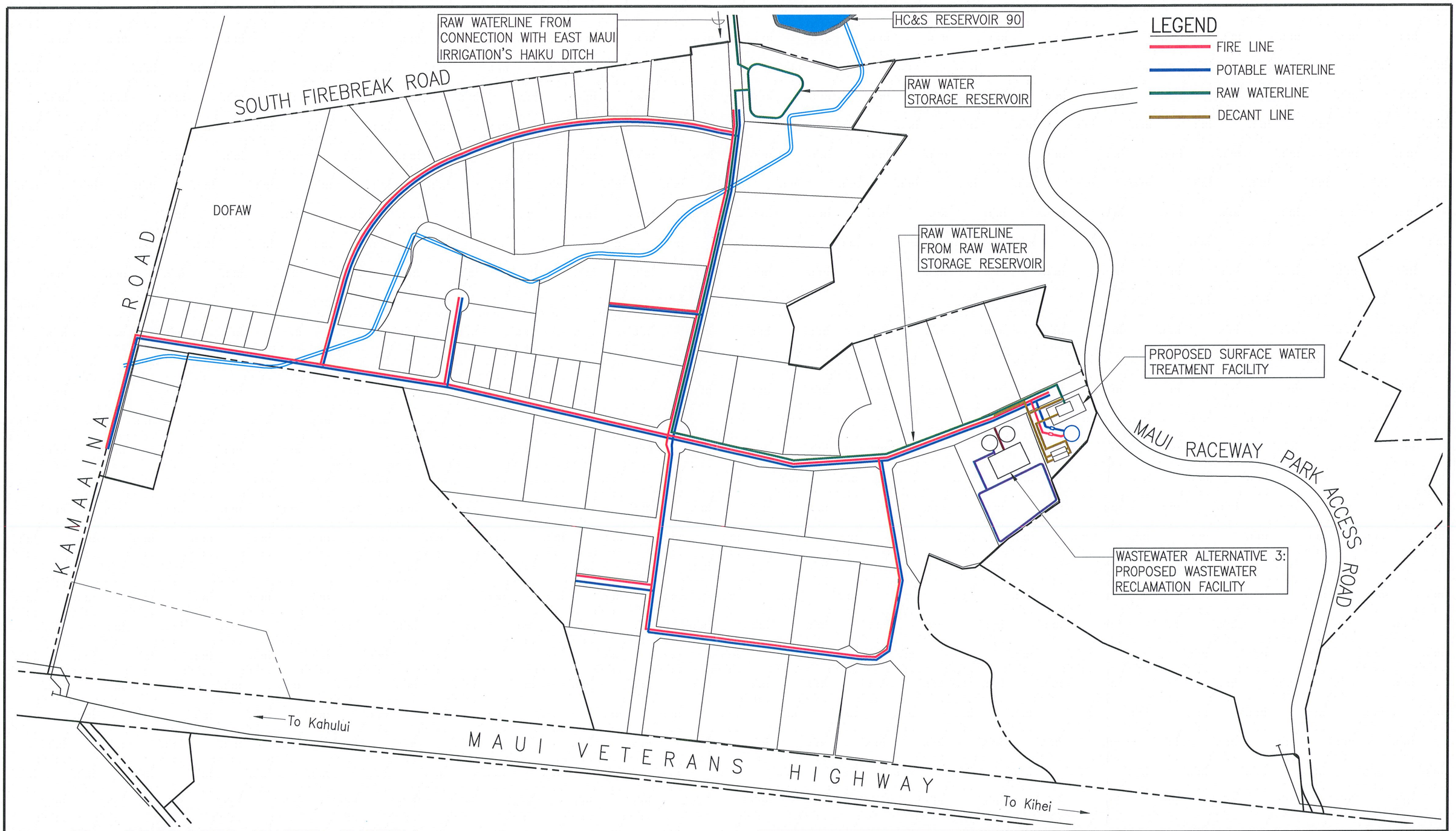
WATER TREATMENT FACILITY PROCESS SCHEMATIC–ALTERNATIVE 2

EXHIBIT 11

DECEMBER 2018

JOB NO. M-15-553

FILENAME: D:\2 - WORK FILES\PROJECT FOLDERS\2015\15-553 - DLNR - KAKANILUA BUSINESS PARK\EXHIBITS\EX 11 - WTF PROCESS SCHEMATIC-ALTERNATIVE 2.DWG Dec 14, 2018-10:00 AM



NORTH

PROPOSED WATER SYSTEM
ALTERNATIVE 3 – SURFACE WATER SYSTEM

SCALE: 1" = 500'

0 1

LINE IS 1 INCH AT FULL SIZE
(If NOT 1-inch : Scale Accordingly)

PRELIMINARY ENGINEERING AND DRAINAGE REPORT

DLNR INDUSTRIAL AND BUSINESS PARK

PULEHUNUI, MAUI, HAWAII

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS, SURVEYORS • HONOLULU, WAILUKU, HILO, HAWAII

PROPOSED WATER SYSTEM
ALTERNATIVE 3

EXHIBIT
12

DECEMBER 2018

JOB NO. M-15-553

FILENAME: D:\2 - WORK FILES\PROJECT FOLDERS\2015\15-553 - DLNR - KAKANILUA BUSINESS PARK\EXHIBITS\EX 12 - PROPOSED WATER SYSTEM - ALTERNATIVE 3.DWG Dec 14, 2018-10:00 AM

CONNECT TO EAST MAUI IRRIGATION'S HAIKU DITCH

RW

HC&S RESERVOIR 90

SURFACE WATER STORAGE RESERVOIR

RAW WATER FROM SURFACE WATER STORAGE RESERVOIR

RW

RW

DC

DECANT WATER RECYCLED TO BEGINNING OF TREATMENT PROCESS

DC

MEMBRANE FILTRATION SYSTEM

BUILDING(S)

PW

FIRE PUMP

POTABLE WATER PUMPS

BW

FW

PW

PW

DC

SLUDGE LAGOONS

TO DISTRIBUTION SYSTEM

TO DISTRIBUTION SYSTEM

POTABLE WATER TANK

DECANT WATER TO IRRIGATION SYSTEM

LEGEND

- RW — RAW WATERLINE
- FW — FIRE LINE
- PW — POTABLE WATERLINE
- BW — BACKWASH/WASTE LINE
- DC — DECANT WATERLINE

WATER TREATMENT FACILITY PROCESS SCHEMATIC–SURFACE WATER SYSTEM

NOT TO SCALE

0 1

LINE IS 1 INCH AT FULL SIZE
(If NOT 1-inch : Scale Accordingly)

PRELIMINARY ENGINEERING AND DRAINAGE REPORT

DLNR INDUSTRIAL AND BUSINESS PARK

PULEHUNUI, MAUI, HAWAII

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS, SURVEYORS • HONOLULU, WAILUKU, HILO, HAWAII

WATER TREATMENT FACILITY PROCESS SCHEMATIC–ALTERNATIVE 3

EXHIBIT 13

FILENAME: D:\2 - WORK FILES\PROJECT FOLDERS\2015\15-553 - DLNR - KAKANILUA BUSINESS PARK\EXHIBITS\EX 13 - WTF PROCESS SCHEMATIC-ALTERNATIVE 3.DWG Dec 14, 2018-10:00 AM

JOB NO. M-15-553

DECEMBER 2018



IMAGE © 2013 GOOGLE EARTH

NORTH

PROPOSED WASTEWATER SYSTEM ALTERNATIVES 2A AND 2B

SCALE: 1" = 1600'

NOTE: ON-SITE WASTEWATER COLLECTION SYSTEM SIMILAR TO WASTEWATER ALTERNATIVE 3.

0 1

LINE IS 1 INCH AT FULL SIZE
(If NOT 1-inch : Scale Accordingly)

PRELIMINARY ENGINEERING AND DRAINAGE REPORT

DLNR INDUSTRIAL AND BUSINESS PARK

PULEHUNUI, MAUI, HAWAII

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS, SURVEYORS • HONOLULU, WAILUKU, HILO, HAWAII

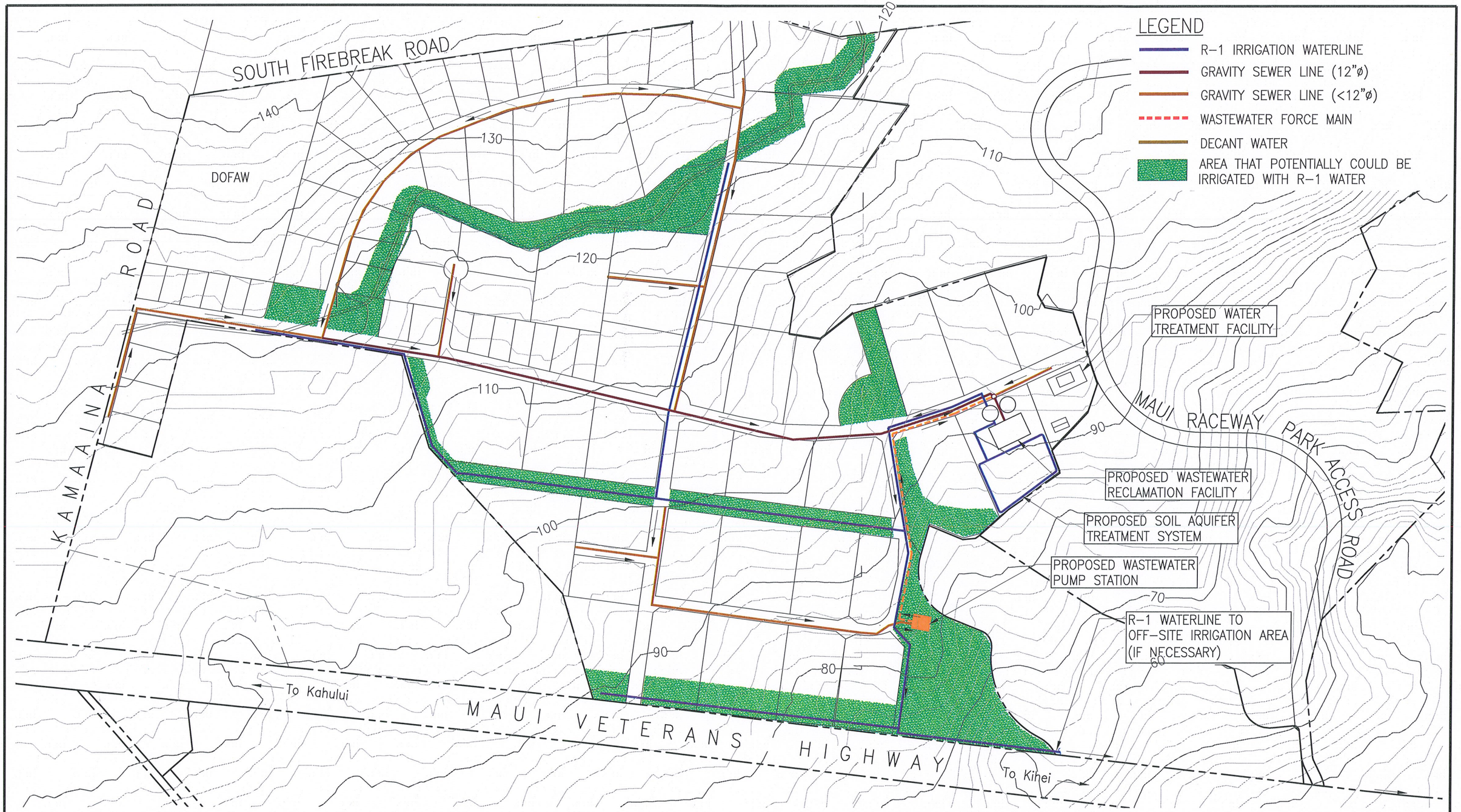
PROPOSED WASTEWATER SYSTEM ALTERNATIVES 2A AND 2B

EXHIBIT 14

DECEMBER 2018

JOB NO. M-15-553

FILENAME: D:\2 - WORK FILES\PROJECT FOLDERS\2015\15-553 - DLNR - KAKANILUA BUSINESS PARK\EXHIBITS\EX 14 - PROPOSED WASTEWATER - ALT 2.DWG Dec 14, 2018-10:00 AM



PROPOSED WASTEWATER SYSTEM ALTERNATIVE 3

SCALE: 1" = 500'

NORTH

0 1

LINE IS 1 INCH AT FULL SIZE
(If NOT 1-inch : Scale Accordingly)

PRELIMINARY ENGINEERING AND DRAINAGE REPORT

DLNR INDUSTRIAL AND BUSINESS PARK

PULEHUNUI, MAUI, HAWAII

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
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PROPOSED WASTEWATER SYSTEM ALTERNATIVE 3

EXHIBIT 15

JOB NO. M-15-553

DECEMBER 2018

FILENAME: D:\2 - WORK FILES\PROJECT FOLDERS\2015\15-553 - DLNR - KAKANILUA BUSINESS PARK\EXHIBITS\EX 15 - PROPOSED WASTEWATER - ALT 3.DWG Dec 14, 2018-10:00 AM

FROM GRAVITY COLLECTION SYSTEM

S

S

S

WASTEWATER RECLAMATION FACILITY

FM

NCR

NCR

R1

R1

NCR

PUMPS

NON-COMPLIANT WATER TANK

R-1 WATER TANK

SOIL AQUIFER TREATMENT (SAT) SYSTEM

WASTEWATER PUMP STATION

S

FROM GRAVITY COLLECTION SYSTEM

R1

TO OFF-SITE IRRIGAITON SYSTEM

R-1 WATER PUMPS

LEGEND

- R1 — R-1 WATER
- NCR — NON-COMPLIANT R-1 WATER LINE
- S — GRAVITY SEWER LINE (12ø)
- S — GRAVITY SEWER LINE (<12ø)
- FM — WASTEWATER FORCE MAIN

WASTEWATER RECLAMATION FACILITY PROCESS SCHEMATIC – ALTERNATIVE 3

NOT TO SCALE

0 1

LINE IS 1 INCH AT FULL SIZE
(If NOT 1-inch : Scale Accordingly)

PRELIMINARY ENGINEERING AND DRAINAGE REPORT

DLNR INDUSTRIAL AND BUSINESS PARK

PULEHUNUI, MAUI, HAWAII

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
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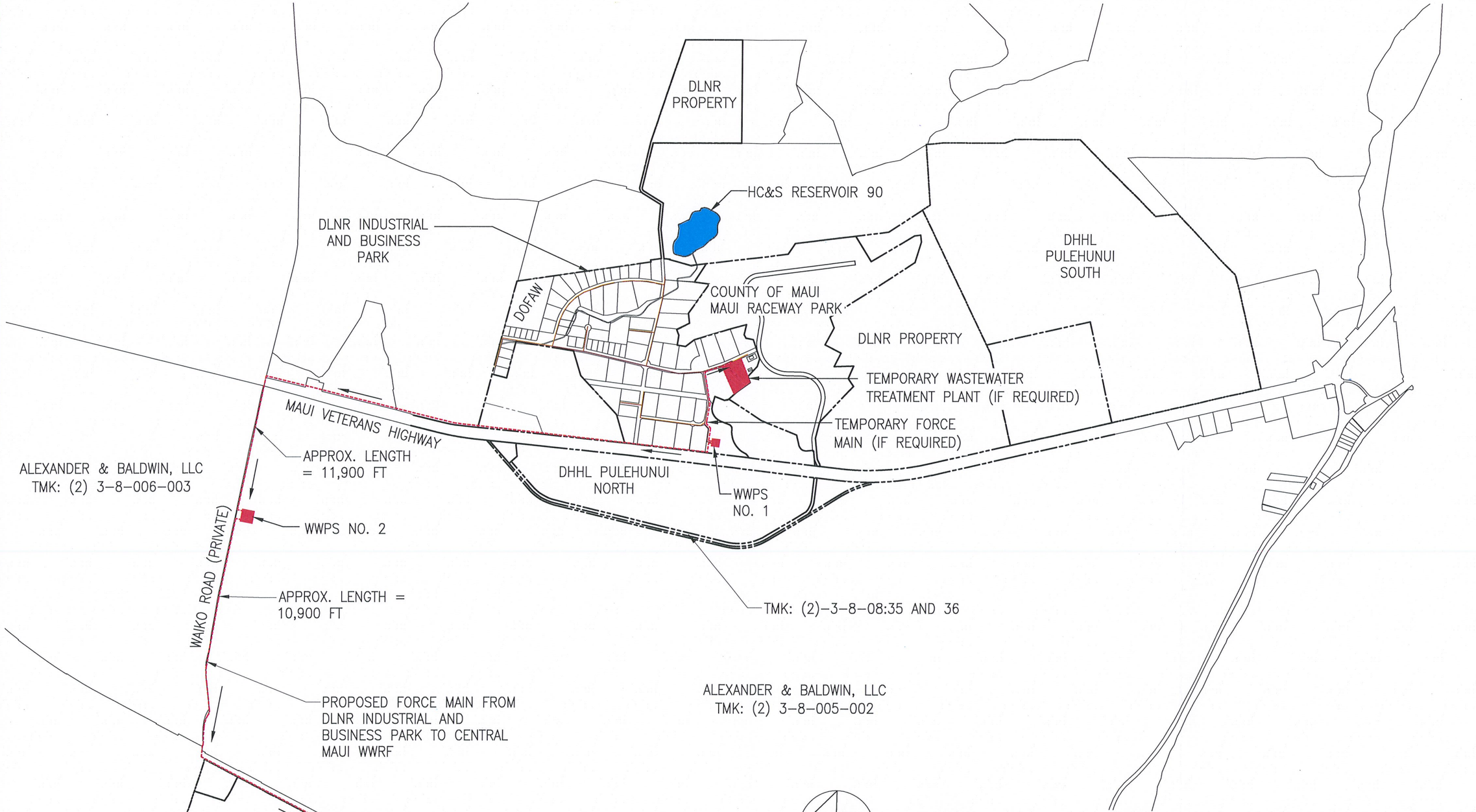
WASTEWATER RECLAMATION FACILITY PROCESS SCHEMATIC

EXHIBIT 16

DECEMBER 2018

JOB NO. M-15-553

FILENAME: D:\2 - WORK FILES\PROJECT FOLDERS\2015\15-553 - DLNR - KAKANILUA BUSINESS PARK\EXHIBITS\EX 16 - WWTF PROCESS SCHEMATIC.DWG Dec 14, 2018-10:00 AM



PROPOSED WASTEWATER SYSTEM ALTERNATIVE 4

SCALE: 1" = 2,000'

PRELIMINARY ENGINEERING AND DRAINAGE REPORT

DLNR INDUSTRIAL AND BUSINESS PARK

PULEHUNUI, MAUI, HAWAII

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
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PROPOSED WASTEWATER SYSTEM ALTERNATIVE 4

EXHIBIT 17

JOB NO. M-15-553

DECEMBER 2018

FILENAME: D:\2 - WORK FILES\PROJECT FOLDERS\2015\15-553 - DLNR - KAKANILUA BUSINESS PARK\EXHIBITS\EX 17 - PROPOSED WW ALTERNATIVE 4.DWG Dec 14, 2018-10:01 AM

APPENDICES

APPENDIX A

Drainage Calculations

APPENDIX A

RUNOFF CALCULATIONS
EXISTING CONDITIONS

Drainage Area Label	Area (acres)	C Runoff Coeff.	Tc (min)	50-Yr Design Intensity (in/hr)	50-Yr, 1-Hr Runoff Q Flow (cfs)	50-Yr, 1-Hr Runoff V Volume (cf)	Flows To
E1	84.669	0.20	27.7	3.80	64.35	115,830	Camp 6 Ditch/ Mokulele Hwy
E2	74.498	0.20	32.0	3.50	52.15	93,870	Nat'l Guard/ Mokulele Hwy
E3	115.698	0.20	40.0	3.20	74.05	133,290	Mokulele Hwy
E4	5.277	0.31	20.2	4.60	7.53	13,554	Exist. Basin E4 (Retained)
TOTAL	**280.142**				**190.55**	**342,990**	
O-1	806.600	(See HydroCAD Calcs)			-	-	Onsite/ Nat'l Guard/ M. Hwy
O-2	78.097	0.20	33.4	3.40	53.11	95,598	Onsite/Camp 6 Ditch/ M. Hwy.
O-3	86.954	0.20	33.5	3.40	59.13	106,434	Mokulele Hwy.

Notes:
1. The Rational Method (Q= CIA) is used to determine 50-year, 1-hour runoff.
2. Refer to Runoff Coefficient Calculations for determination of "C" value.
3. Refer to Time of Concentration Calculations for determination of "Tc" value.
4. Rainfall Intensity obtained from the NOAA Precipitation Frequency Data Server, accessed online at: http://hdsc.nws.noaa.gov/hdsc/pfds
5. Runoff volume determined using triangular Rational Method hydrograph ending at 1-hour. Hydrograph Volume = (Q ft^3/sec) x (60 sec/min) x (60 min/hr) x (1/2)
6. Refer to Detenion Basin Summary for Basin E4.

APPENDIX A

RUNOFF CALCULATIONS
PROPOSED CONDITIONS

Drainage Area Label	Area (acres)	C Runoff Coeff.	Tc (min)	50-Yr Design Intensity (in/hr)	50-Yr, 1-Hr Runoff Q Flow (cfs)	50-Yr, 1-Hr Runoff V Volume (cf)	Flows To
P1	81.899	0.74	10.8	5.90	357.57	643,626	Basin P1 (Retained)
P2	33.846	0.74	13.4	5.40	135.25	243,450	Basin P2 (Qout = 24.14 cfs)
P3	30.199	0.74	11.1	5.80	129.61	233,298	Basin P3 (Qout = 18.50 cfs)
P4	71.034	0.74	12.9	5.50	289.11	520,398	Basin P4 (Retained)
P5	57.887	0.74	11.2	5.80	248.45	447,210	Basin P5 (Qout = 81.78 cfs)
P6	5.277	0.74	8.4	6.70	26.16	47,088	Basin P6 (Retained)
TOTAL	**280.142**				**1,186.15**	**2,135,070**	**Before Detention**
					124.42	**223,956**	**After Detention**
O-1	(No Change, See Existing Conditions)				-	-	Onsite/ Nat'l Guard/ M. Hwy
O-2	(No Change, See Existing Conditions)				53.11	95,598	Onsite/Camp 6 Ditch/ M. Hwy.
O-3	(No Change, See Existing Conditions)				59.13	106,434	Mokulele Hwy.

Notes:
1. The Rational Method (Q= CIA) is used to determine 50-year, 1-hour runoff.
2. Refer to Runoff Coefficient Calculations for determination of "C" value.
3. Refer to Time of Concentration Calculations for determination of "Tc" value.
4. Rainfall Intensity obtained from the NOAA Precipitation Frequency Data Server, accessed online at: http://hdsc.nws.noaa.gov/hdsc/pfds
5. Runoff volume determined using triangular Rational Method hydrograph ending at 1-hour. Hydrograph Volume = (Q ft^3/sec) x (60 sec/min) x (60 min/hr) x (1/2)
6. Refer to Detention Basin Summary for basin outflows.

APPENDIX A

DETENTION BASIN SUMMARY

Basin Label	Contrib. Drainage Area	Contrib. Area to Basin (acres)	Basin Storage Volume (cf)	Inflow To Basin		Outflow From Basin		Basin Ponding Depth (ft)	Basin Footprint Area (ac)
				Q_{50} (cfs)	Vol_{50} (cfs)	Q_{50} (cfs)	Vol_{50} (cfs)		
Existing Conditions									
Basin E4	E4	5.277	84,000	7.53	13,554	0.00	0	5.0	0.4
Proposed Conditions									
Basin(s) P1	P1	81.899	650,000	357.57	643,626	0.00	0	4.0	6.3
Basin P2	P2	33.846	200,000	135.25	243,450	24.14	43,450	4.0	2.0
Basin P3	P3	30.199	200,000	129.61	233,298	18.50	33,298	4.0	2.0
Basin(s) P4	P4	71.034	550,000	289.11	520,398	0.00	0	4.0	5.4
Basin(s) P5	P5		300,000	248.45	447,210	81.78	147,210	4.0	2.9
Basin P6	P6	5.277	50,000	26.16	47,088	0.00	0	4.0	0.5

Notes:
1. Multiple basins may be used to arrive at the total proposed storage volume.
2. Basin outflow is estimated based on the provided storage volume. Basin modeling will be used to verify the final design.
3. Basin depth does not include embankment height (freeboard) above the water surface.
4. Basin footprint is approximate and is provided for the purpose of estimating the land area needed to be reserved for basins.
5. The HC&S Reservoir No. 6 is not assumed to have significant retention volume above its normal operating water level. Therefore the irrigation reservoir is ignored in runoff calculations.

APPENDIX A

RUNOFF COEFFICIENT CALCULATIONS

Drainage Area Label	C_{50} = 0.10 Ex. Grass/ Weed Mix		C_{50} = 0.15 Prop. Open Space Area		C_{50} = 0.20 Ex. Fallow Sugar Cane		C_{50} = 0.80 Prop. Comm. & Lt. Industr.		C_{50} = 0.85 Ex. Dirt/ Bare Soil		Weighted Avg. Coeff. TOTAL	
	Area (ac)	Area (%)	Area (ac)	Area (%)	Area (ac)	Area (%)	Area (ac)	Area (%)	Area (ac)	Area (%)	Area (ac)	Runoff Coeff.
Existing Conditions												
E1	0	0.0	0	0.0	84.669	100.0	0	0.0	0	0.0	84.669	**0.20**
E2	0	0.0	0	0.0	74.498	100.0	0	0.0	0	0.0	74.498	**0.20**
E3	0	0.0	0	0.0	115.698	100.0	0	0.0	0	0.0	115.698	**0.20**
E4	3.777	71.6	0	0.0	0	0.0	0	0.0	1.500	28.4	5.277	**0.31**
O-1	(See HydroCAD Calculations)										806.600	-
O-2	0	0.0	0	0.0	78.097	100.0	0	0.0	0	0.0	78.097	**0.20**
O-3	0	0.0	0	0.0	86.954	100.0	0	0.0	0	0.0	86.954	**0.20**
Proposed Conditions												
P1	0	0.0	8.190	10.0	0	0.0	73.709	90.0	0	0.0	81.899	**0.74**
P2	0	0.0	3.385	10.0	0	0.0	30.461	90.0	0	0.0	33.846	**0.74**
P3	0	0.0	3.020	10.0	0	0.0	27.179	90.0	0	0.0	30.199	**0.74**
P4	0	0.0	7.103	10.0	0	0.0	63.931	90.0	0	0.0	71.034	**0.74**
P5	0	0.0	5.789	10.0	0	0.0	52.098	90.0	0	0.0	57.887	**0.74**
P6	0	0.0	0.528	10.0	0	0.0	4.749	90.0	0	0.0	5.277	**0.74**
O-1	(No Change, See Existing Conditions)										806.600	-
O-2	(No Change, See Existing Conditions)										78.097	**0.20**
O-3	(No Change, See Existing Conditions)										86.954	**0.20**

Surface Type Detailed Descriptions:

Ex. Grass/ Weed Mix, Good Cover, Mild Slopes, HSG B	C = 0.10
Prop. Open Space Area, Good Cover, Mild Slopes, HSG B	C = 0.15
Ex. Fallow Sugar Cane, Fair Cover, Mild Slopes, HSG B	C = 0.20
Prop. Commercial and Light Industrial, Mild Slopes, HSG B	C = 0.80
Ex. Dirt Roadways or Bare Soil, HSG B	C = 0.85

Note: 1. Proposed open space area estimated to be 10% of total site area.

APPENDIX A

TIME OF CONCENTRATION CALCULATIONS

Drain Area Label	Flow Segment 1 Overland Flow				Flow Segment 2 Concentrated Flow				Flow Segment 3 Open Channel Flow				TOTAL
	Surf. Type	Length (ft)	Slope (%)	Time (min)	Surf. Type	Length (ft)	Slope (%)	Time (min)	Surf. Type	Length (ft)	Slope (%)	Time (min)	Time (min)
Existing Conditions													
E1	Cane	1,250	1.6	27.7	-	-	-	0.0	-	-	-	0.0	**27.7**
E2	Cane	1,850	1.6	32.0	-	-	-	0.0	-	-	-	0.0	**32.0**
E3	Cane	3,190	1.2	40.0	-	-	-	0.0	-	-	-	0.0	**40.0**
E4	Grass,Poo	510	1.3	20.2	-	-	-	0.0	-	-	-	0.0	**20.2**
O-1	(See HydroCAD Calculations)												-
O-2	Cane	1,810	1.2	33.4	-	-	-	0.0	-	-	-	0.0	**33.4**
O-3	Cane	1,820	1.2	33.5	-	-	-	0.0	-	-	-	0.0	**33.5**
Proposed Conditions													
P1	Grass,Avg	20	2.0	6.6	Pave	100	1.5	0.3	Pipe	1,820	1.0	3.9	**10.8**
P2	Grass,Avg	20	2.0	6.6	Pave	100	1.5	0.3	Pipe	2,710	0.8	6.5	**13.4**
P3	Grass,Avg	20	2.0	6.6	Pave	100	1.5	0.3	Pipe	1,730	0.8	4.1	**11.1**
P4	Grass,Avg	20	2.0	6.6	Pave	100	1.5	0.3	Pipe	2,340	0.7	6.0	**12.9**
P5	Grass,Avg	20	2.0	6.6	Pave	100	1.5	0.3	Pipe	1,890	0.9	4.3	**11.2**
P6	Grass,Avg	20	2.0	6.6	Pave	100	1.5	0.3	Pipe	670	0.9	1.5	**8.4**
O-1	(No Change, See Existing Conditions)												-
O-2	(No Change, See Existing Conditions)												**33.4**
O-3	(No Change, See Existing Conditions)												**33.5**

Notes:
1. County of Maui Storm Drain Manual Plate 1 used for the determination of overland flow time. Fallow Sugar Cane and Sugar Cane assumed equivalent to "Poor Grass Surface" in Plate 1.
2. County of Maui Storm Drain Manual Table 4 used for the determination of concentrated flow time.
3. Open Channel Flow velocity estimated using the Manning's equation for the channel cross-section at full-flow.

Summary for Subcatchment O-1: Offsite Area O-1

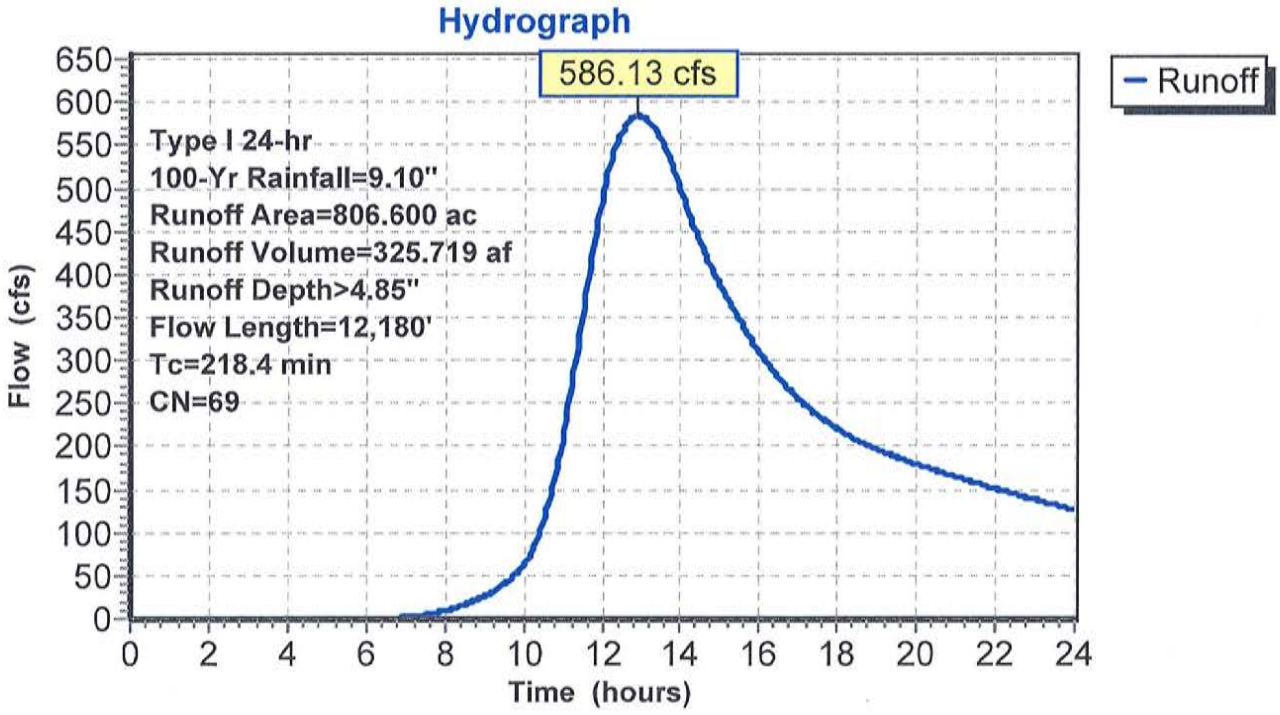
Runoff = 586.13 cfs @ 12.87 hrs, Volume= 325.719 af, Depth> 4.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type I 24-hr 100-Yr Rainfall=9.10"

Area (ac)	CN	Description
11.700	98	Water Surface, 0% imp, HSG C
2.800	30	Meadow, non-grazed, HSG A
271.000	58	Meadow, non-grazed, HSG B
432.500	71	Meadow, non-grazed, HSG C
88.600	91	Fallow, bare soil, HSG C
806.600	69	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.7	100	0.0220	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
208.7	12,080	0.0190	0.96		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
218.4	12,180	Total			

Subcatchment O-1: Offsite Area O-1



Culvert Calculator Report
Typical Exist. Maui Veterans Hwy. Culvert

Comments:
Dual 24" RCP Culverts
Typ. Length = 140' +/-
Typ. Slope = 1.00% +/-
Assume Max. Headwater = 2 x Diameter

Find:
Typ. Culvert Capacity = 51 cfs

Solve For: Discharge

Culvert Summary					
Allowable HW Elevation	104.00	ft	Headwater Depth/Height	2.00	
Computed Headwater Elev	104.00	ft	Discharge	51.46	cfs
Inlet Control HW Elev.	104.00	ft	Tailwater Elevation	0.00	ft
Outlet Control HW Elev.	103.82	ft	Control Type	Inlet Control	

Grades					
Upstream Invert	100.00	ft	Downstream Invert	98.60	ft
Length	140.00	ft	Constructed Slope	0.0100	ft/ft

Hydraulic Profile					
Profile	CompositeM2PressureProfile		Depth, Downstream	1.78	ft
Slope Type	Mild		Normal Depth	N/A	ft
Flow Regime	Subcritical		Critical Depth	1.78	ft
Velocity Downstream	8.71	ft/s	Critical Slope	0.0115	ft/ft

Section					
Section Shape	Circular		Mannings Coefficient	0.013	
Section Material	Concrete		Span	2.00	ft
Section Size	24 inch		Rise	2.00	ft
Number Sections	2				

Outlet Control Properties					
Outlet Control HW Elev.	103.82	ft	Upstream Velocity Head	1.04	ft
Ke	0.50		Entrance Loss	0.52	ft

Inlet Control Properties					
Inlet Control HW Elev.	104.00	ft	Flow Control	N/A	
Inlet Type	Square edge w/headwall		Area Full	6.3	ft²
K	0.00980		HDS 5 Chart	1	
M	2.00000		HDS 5 Scale	1	
C	0.03980		Equation Form	1	
Y	0.67000				

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FlowMaster Report: Exist Camp 6 Ditch

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.015	
Channel Slope	0.00038	ft/ft
Normal Depth	4.00	ft
Left Side Slope	1.00	ft/ft (H:V)
Right Side Slope	1.00	ft/ft (H:V)
Bottom Width	4.00	ft

Results

Discharge	101.00	ft^3/s
Flow Area	32.00	ft^2
Wetted Perimeter	15.31	ft
Hydraulic Radius	2.09	ft
Top Width	12.00	ft
Critical Depth	2.23	ft
Critical Slope	0.00362	ft/ft
Velocity	3.16	ft/s
Velocity Head	0.15	ft
Specific Energy	4.15	ft
Froude Number	0.34	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	4.00	ft
Critical Depth	2.23	ft
Channel Slope	0.00038	ft/ft

FlowMaster Report: Exist Camp 6 Ditch

GVF Output Data

Critical Slope	0.00362	ft/ft

Messages

Notes

Given:
Approximate Ditch X-Section:Trapezoidal, 4' bottom, 1:1 side-slopes, 4' deep
Approximate Ditch Slope = (2'/5280') = 0.038%
Manning's n = 0.015 (concrete)

Find:
Full Flow Capacity = 101 cfs

Culvert Calculator Report
Prop. Onsite Culvert for DA O-1

Comments:
Q100 = 586.13 cfs
Assumed. Length = 100'
Assumed Slope = 1.00%
Assume Max. Headwater = Pipe Crown + 2.5'

Find:
For Culvert Size 3 x 60" HDPE, Headwater = 7.3' (OK)
Use 3 x 60" HDPE Culvert

Solve For: Headwater Elevation

Culvert Summary					
Allowable HW Elevation	107.00	ft	Headwater Depth/Height	1.45	
Computed Headwater Elev	107.27	ft	Discharge	586.13	cfs
Inlet Control HW Elev.	107.27	ft	Tailwater Elevation	0.00	ft
Outlet Control HW Elev.	107.14	ft	Control Type	Inlet Control	

Grades					
Upstream Invert	100.00	ft	Downstream Invert	99.00	ft
Length	100.00	ft	Constructed Slope	0.0100	ft/ft

Hydraulic Profile					
Profile	S2		Depth, Downstream	3.33	ft
Slope Type	Steep		Normal Depth	3.06	ft
Flow Regime	Supercritical		Critical Depth	3.99	ft
Velocity Downstream	14.07	ft/s	Critical Slope	0.0050	ft/ft

Section					
Section Shape	Circular		Mannings Coefficient	0.012	
Section Material	HDPE (Smooth Interior)		Span	5.00	ft
Section Size	60 inch		Rise	5.00	ft
Number Sections	3				

Outlet Control Properties					
Outlet Control HW Elev.	107.14	ft	Upstream Velocity Head	2.10	ft
Ke	0.50		Entrance Loss	1.05	ft

Inlet Control Properties					
Inlet Control HW Elev.	107.27	ft	Flow Control	N/A	
Inlet Type	Square edge w/headwall		Area Full	58.9	ft²
K	0.00980		HDS 5 Chart	1	
M	2.00000		HDS 5 Scale	1	
C	0.03980		Equation Form	1	
Y	0.67000				

Culvert Calculator Report
Prop. Onsite Culvert for DA O-2

Comments:
Q50 = 53.11 cfs
Assumed. Length = 100'
Assumed Slope = 1.00%
Assume Max. Headwater = Crown + 2'

Find:
For Culvert Size 36" HDPE, Headwater = 4.2' (OK)
Use 36" HDPE Culvert

Solve For: Headwater Elevation

Culvert Summary					
Allowable HW Elevation	105.00	ft	Headwater Depth/Height	1.41	
Computed Headwater Elev	104.24	ft	Discharge	53.11	cfs
Inlet Control HW Elev.	104.24	ft	Tailwater Elevation	0.00	ft
Outlet Control HW Elev.	104.20	ft	Control Type	Inlet Control	

Grades					
Upstream Invert	100.00	ft	Downstream Invert	99.00	ft
Length	100.00	ft	Constructed Slope	0.0100	ft/ft

Hydraulic Profile					
Profile	S2		Depth, Downstream	1.97	ft
Slope Type	Steep		Normal Depth	1.91	ft
Flow Regime	Supercritical		Critical Depth	2.37	ft
Velocity Downstream	10.78	ft/s	Critical Slope	0.0058	ft/ft

Section					
Section Shape	Circular		Mannings Coefficient	0.012	
Section Material	Corrugated HDPE (Smooth Interior)		Span	3.00	ft
Section Size	36 inch		Rise	3.00	ft
Number Sections	1				

Outlet Control Properties					
Outlet Control HW Elev.	104.20	ft	Upstream Velocity Head	1.22	ft
Ke	0.50		Entrance Loss	0.61	ft

Inlet Control Properties					
Inlet Control HW Elev.	104.24	ft	Flow Control	N/A	
Inlet Type	Square edge w/headwall		Area Full	7.1	ft²
K	0.00980		HDS 5 Chart	1	
M	2.00000		HDS 5 Scale	1	
C	0.03980		Equation Form	1	
Y	0.67000				

FlowMaster Report: Prop. Interceptor Ditch for DA O-2

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.035	
Channel Slope	0.0030	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	4.00	ft
Discharge	53.11	ft^3/s

Results

Normal Depth	2.01	ft
Flow Area	20.16	ft^2
Wetted Perimeter	16.71	ft
Hydraulic Radius	1.21	ft
Top Width	16.06	ft
Critical Depth	1.28	ft
Critical Slope	0.0197	ft/ft
Velocity	2.63	ft/s
Velocity Head	0.11	ft
Specific Energy	2.12	ft
Froude Number	0.41	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	2.01	ft
Critical Depth	1.28	ft
Channel Slope	0.0030	ft/ft

FlowMaster Report: Prop. Interceptor Ditch for DA O-2

GVF Output Data

Critical Slope	0.0197	ft/ft

Messages

Notes

For:
Q50 = 53.11 cfs
Assumed Ditch Slope = 0.30%
Assumed Ditch X-Section:Trapezoidal, 4' bottom, 3:1 side-slopes, 4.5' minimum depth
Manning's n = 0.035

Find:
Flow Depth (dn) = 2.01'
Velocity (v) = 2.63 fps
Required Freeboard (FB) = 2.00' + 0.025' v (dn)^(1/3) = 2.08'
Total Required Depth = dn + FB = 2.01' + 2.08' = 4.09'
Use ditch with 4' bottom, 3:1 side-slopes, and 4.5' min. depth.

APPENDIX A

WATER QUALITY CALCULATIONS

Drainage Area	Water Quality BMP	Treatment Type	Contributing Drainage Area (ac)	Detention Based Design			
				Imperv. Area (%)	Runoff Coeff	Rainfall Amount (in)	Required WQDV (cf)
Proposed Conditions							
P1	Extended Detention	Detention Based	81.899	70.0	0.68	1.0	202,159
P2	Extended Detention	Detention Based	33.846	70.0	0.68	1.0	83,545
P3	Extended Detention	Detention Based	30.199	70.0	0.68	1.0	74,543
P4	Extended Detention	Detention Based	71.034	70.0	0.68	1.0	175,340
P5	Extended Detention	Detention Based	57.887	70.0	0.68	1.0	142,888
P6	Extended Detention	Detention Based	5.277	70.0	0.68	1.0	13,026
O-1	N/A- Bypassed	-	-	-	-	-	-
O-2	N/A- Bypassed	-	-	-	-	-	-
O-3	N/A- Bypassed	-	-	-	-	-	-

Notes: 1. Detention based designs are required to treat WQDV = C x 1.0" x A x 3630, where C = 0.05 + (0.009 x IMP%).
2. Water Quality Treatment is not required for offsite flow that is bypassed through or around the site.
3. Impervious area is estimated based on typical commercial and light industrial use, plus 10% site open space area.
4. Water Quality Treatment will be provided within the proposed detention/retention basins. The water quality volume will be retained.

APPENDIX B

Water Calculations

DIVISION OF FORESTRY AND WILDLIFE (DOFAW)

LOT 1 48,983.4
LOT 2 48,983.4
LOT 3 48,983.4
LOT 4 48,983.4
LOT 5 24,790.7
LOT 6 24,790.7
LOT 7 24,790.7
LOT 8 24,790.7
LOT 9 24,790.7
LOT 10 24,790.7
LOT 11 742,217.6
LOT 12 77,987.5
LOT 13 88,293.4
LOT 14 95,117.1
LOT 15 134,284.3
LOT 16 98,715.1
LOT 17 65,044.7
LOT 18 57,916.6
LOT 19 47,911.3
LOT 20 38,200.4
LOT 21 47,774.1
LOT 22 45,943.0
LOT 23 63,589.2
LOT 24 77,642.8
LOT 25 94,982
LOT 26 256,917.8
LOT 27 213,511.5
LOT 28 225,428.5
LOT 29 179,066.5
LOT 30 129,412
LOT 31 78,614
LOT 32 57,768
LOT 33 48,723
LOT 34 37,782
LOT 35 41,560
LOT 36 71,497.7
LOT 37 79,943.1
LOT 38 84,700.9
LOT 39 88,663.2
LOT 40 33,463
LOT 41 34,154
LOT 42 21,559.7
LOT 43 25,792.7
LOT 44 25,826
LOT 45 25,993
LOT 46 29,747.9
LOT 47 31,245.6
LOT 48 31,499.6
LOT 49 145,750.2
LOT 50 113,979.2
LOT 51 121,887.8
LOT 52 295,181.7
LOT 53 18,1118
LOT 54 175,480.7
LOT 55 153,446
LOT 56 108,613
LOT 57 161,256.7
LOT 58 180,815
LOT 59 194,206
LOT 60 192,756
LOT 61 166,378
LOT 62 103,414
LOT 63 225,777.4
LOT 64 267,879.2
LOT 65 170,961
LOT 66 155,597.9
LOT 67 113,787
LOT 68 162,982.4
LOT 69 157,409.3
LOT 70 306,473.7
LOT 71 97,409
LOT 72 89,546
LOT 73 144,032
LOT 74 211,896.9
LOT 75 152,470
LOT 76 104,170
LOT 77 165,202
LOT 78 160,660
LOT 79 229,812.6
LOT 80 159,233
LOT 81 160,094.5
LOT 82 189,759.8
LOT 83 197,213.8

LOT SIZE SUMMARY (ORIGINAL LOTS)

0.5 TO <1	ACRE	25 LOTS
1 TO <3	ACRE	32 LOTS
3 TO <5	ACRE	21 LOTS
>5	ACRE	5 LOTS
TOTAL		83 LOTS

TOTAL PROJECT AREA:	280.4 AC
TOTAL LOT AREA:	227.0 AC
ROAD AREA:	22.8 AC
GREEN AREA:	30.6 AC

NORTH

PRELIMINARY SITE PLAN

SCALE: 1" ~ 400'

0 1

LINE IS 1 INCH AT FULL SIZE
(If NOT 1-inch : Scale Accordingly)

PRELIMINARY ENGINEERING AND DRAINAGE REPORT

DLNR INDUSTRIAL AND BUSINESS PARK

PULEHUNUI, MAUI, HAWAII

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS, SURVEYORS • HONOLULU, WAILUKU, HILO, HAWAII

PRELIMINARY SITE PLAN WITH LOT NUMBERS AND AREAS

EXHIBIT B-1

JOB NO. M-15-553

OCTOBER 2017

FILENAME: D:\2 - WORK FILES\PROJECT FOLDERS\2015\15-553 - DLNR - KAKANILUA BUSINESS PARK\EXHIBITS\EX B-1 -SITE PLAN W NUMBERS.DWG Oct 18, 2017-10:17 AM

Project Area:	280.4 acres		
Lot Area:	227.0 acres		
Road Area:	22.8 acres		
Remaining Area (Green Area):	30.6 acres		
Building Floor Area Ratio (FAR):	0.4 =	17,424	sf/acre

DEMAND 1 - DWS WSS 140 GPD/1,000 SF - FAR = 0.40						
LOT WATER DEMAND						
	Area (Acres)	Area (sf)	Building Area Based on FAR of 0.40 (sf)	Total Average Water Demand (gpd)	**Maximum Day Water Demand (gpd)**	Peak Hour Potable Water Demand (gpm)
Lot Demand[1]	210.00	9,150,000	3,659,040	512,300	768,450	1,067
DOFAW	17.04			27,300	40,950	57
Sub-Total Lots	**227.04**			**539,600**	**809,400**	1,124
Sub-Total Lots (Rounded)				**540,000**	**809,000**	

OTHER IRRIGATION DEMANDS - DWS Standards			
Road Areas		22.8	Acres
Irrigated Road Area	40%	9.1	Acres
Irrigation Unit Demand[2]		1,700	gpd/acre
Sub-Total Road Irrigation Demand		15,500	gpd
Green Area		30.6	Acres
Irrigated Green Area	80%	24.4	Acres
Irrigation Unit Demand[2]		1,700	gpd/acre
Sub-Total Green Area Irrigation Demand		41,600	gpd
Sub-Total Average Day Irrigation Demand (rounded)		**57,000**	**gpd**
Sub-Total Maximum Day Irrigation Demand (rounded)		**86,000**	**gpd**
TOTAL AVERAGE DAY DEMAND (Rounded)		**597,000**	**GPD**
TOTAL MAXIMUM DAY DEMAND (Rounded)		**895,000**	**GPD**

[1]Lot Demand does not include DOFAW Area.

[2] WSS Average Daily Demand for "Schools, Parks".

Demand 1 - 140 gpd/1000 sf					
Lot No.	Area (Acres)	Area (sf)	Building Area Based on 17,424 sf/acre (sf)	**Total Average Water Demand (gpd)**	**Maximum Potable Water Demand (gpd)**
1	1.12	48983.4	19,593.4	2,743	4,115
2	1.12	48983.4	19,593.4	2,743	4,115
3	1.12	48983.4	19,593.4	2,743	4,115
4	1.12	48983.4	19,593.4	2,743	4,115
5	0.57	24790.7	9,916.3	1,388	2,082
6	0.57	24790.7	9,916.3	1,388	2,082
7	0.57	24790.7	9,916.3	1,388	2,082
8	0.57	24790.7	9,916.3	1,388	2,082
9	0.57	24790.7	9,916.3	1,388	2,082
10	0.57	24790.7	9,916.3	1,388	2,082
11	See Below				
12	1.79	77987.5	31,195.0	4,367	6,551
13	2.03	88293.4	35,317.4	4,944	7,417
14	2.18	95117.1	38,046.8	5,327	7,990
15	3.08	134284.3	53,713.7	7,520	11,280
16	2.27	98715.1	39,486.0	5,528	8,292
17	1.49	65044.7	26,017.9	3,643	5,464
18	1.33	57916.6	23,166.6	3,243	4,865
19	1.10	47911.3	19,164.5	2,683	4,025
20	0.88	38200.4	15,280.2	2,139	3,209
21	1.10	47774.1	19,109.6	2,675	4,013
22	1.05	45943.0	18,377.2	2,573	3,859
23	1.46	63589.2	25,435.7	3,561	5,341
24	1.78	77642.8	31,057.1	4,348	6,522
25	2.18	94982.0	37,992.8	5,319	7,978
26	5.90	256917.8	102,767.1	14,387	21,581
27	4.90	213511.5	85,404.6	11,957	17,935
28	5.18	225428.5	90,171.4	12,624	18,936
29	4.11	179066.5	71,626.6	10,028	15,042
30	2.97	129412.0	51,764.8	7,247	10,871
31	1.80	78614.0	31,445.6	4,402	6,604
32	1.33	57768.0	23,107.2	3,235	4,853
33	1.12	48723.0	19,489.2	2,728	4,093
34	0.87	37782.0	15,112.8	2,116	3,174
35	0.95	41560.0	16,624.0	2,327	3,491
36	1.64	71497.7	28,599.1	4,004	6,006
37	1.84	79943.1	31,977.2	4,477	6,715
38	1.94	84700.9	33,880.4	4,743	7,115
39	2.04	88663.2	35,465.3	4,965	7,448

Demand 1 - 140 gpd/1000 sf					
Lot No.	Area (Acres)	Area (sf)	Building Area Based on 17,424 sf/acre (sf)	**Total Average Water Demand (gpd)**	**Maximum Potable Water Demand (gpd)**
40	0.77	33463.0	13,385.2	1,874	2,811
41	0.78	34154.0	13,661.6	1,913	2,869
42	0.49	21559.7	8,623.9	1,207	1,811
43	0.59	25792.7	10,317.1	1,444	2,167
44	0.59	25826.0	10,330.4	1,446	2,169
45	0.60	25993.0	10,397.2	1,456	2,183
46	0.68	29747.9	11,899.2	1,666	2,499
47	0.72	31245.6	12,498.2	1,750	2,625
48	0.72	31499.6	12,599.8	1,764	2,646
49	3.35	145750.2	58,300.1	8,162	12,243
50	2.62	113979.2	45,591.7	6,383	9,574
51	2.80	121887.8	48,755.1	6,826	10,239
52	6.78	295181.7	118,072.7	16,530	24,795
53	4.16	181118.0	72,447.2	10,143	15,214
54	4.03	175480.7	70,192.3	9,827	14,740
55	3.52	153446.0	61,378.4	8,593	12,889
56	2.49	108613.0	43,445.2	6,082	9,123
57	3.70	161256.7	64,502.7	9,030	13,546
58	4.15	180815.0	72,326.0	10,126	15,188
59	4.46	194206.0	77,682.4	10,876	16,313
60	4.43	192756.0	77,102.4	10,794	16,192
61	3.82	166378.0	66,551.2	9,317	13,976
62	2.37	103414.0	41,365.6	5,791	8,687
63	5.18	225777.4	90,311.0	12,644	18,965
64	6.15	267879.2	107,151.7	15,001	22,502
65	3.92	170961.0	68,384.4	9,574	14,361
66	3.57	155597.9	62,239.2	8,713	13,070
67	2.61	113787.0	45,514.8	6,372	9,558
68	3.74	162982.4	65,193.0	9,127	13,691
69	3.61	157409.3	62,963.7	8,815	13,222
70	7.04	306473.7	122,589.5	17,163	25,744
71	2.24	97409.0	38,963.6	5,455	8,182
72	2.06	89546.0	35,818.4	5,015	7,522
73	3.31	144032.0	57,612.8	8,066	12,099
74	4.86	211896.9	84,758.8	11,866	17,799
75	3.50	152470.0	60,988.0	8,538	12,807
76	2.39	104170.0	41,668.0	5,834	8,750
77	3.79	165202.0	66,080.8	9,251	13,877
78	3.69	160660.0	64,264.0	8,997	13,495

Demand 1 - 140 gpd/1000 sf					
Lot No.	Area (Acres)	Area (sf)	Building Area Based on 17,424 sf/acre (sf)	**Total Average Water Demand (gpd)**	**Maximum Potable Water Demand (gpd)**
79	5.28	229812.6	91,925.0	12,870	19,304
80	3.66	159233.0	63,693.2	8,917	13,376
81	3.68	160094.5	64,037.8	8,965	13,448
82	4.36	189759.8	75,903.9	10,627	15,940
83	4.53	197213.8	78,885.5	11,044	16,566
Sub-Total	**210.00**	9147598.8	3,659,040	**512,266**	**768,398**
11 (See Note)	17.04	742217.6		**27,300**	**40,950**
TOTAL LOTS	**227.04**	**9,889,816**	**3,686,340**	**539,566**	**809,348**

Project Area:	280.4 acres
Lot Area:	227.0 acres
Road Area:	22.8 acres
Remaining Area (Green Area):	30.6 acres

DEMAND 2 - DWS WSS 6,000 GPD/ACRE						
LOT WATER DEMAND						
	Area (Acres)	Area (sf)	Building Area (sf)	Total Average Water Demand (gpd)	Maximum Day Water Demand (gpd)	Peak Hour Potable Water Demand (gpm)
Lot Demand[1]	210.00	9,147,599	NA	1,260,000	1,890,000	2,625
DOFAW	17.04			27,300	40,950	57
Sub-Total Lots	**227.04**			**1,287,300**	**1,930,950**	2,682
Sub-Total Lots (Rounded)				**1,287,000**	**1,931,000**	

OTHER IRRIGATION DEMANDS - DWS Standards			
Road Areas		22.8	Acres
Irrigated Road Area	40%	9.1	Acres
Irrigation Unit Demand[2]		1,700	gpd/acre
Sub-Total Road Irrigation Demand		15,500	gpd
Green Area		30.6	Acres
Irrigated Green Area	80%	24.4	Acres
Irrigation Unit Demand[2]		1,700	gpd/acre
Sub-Total Green Area Irrigation Demand		41,600	gpd
Sub-Total Average Day Irrigation Demand (rounded)		**57,000**	**gpd**
Sub-Total Maximum Day Irrigation Demand (rounded)		**86,000**	**gpd**
TOTAL AVERAGE DAY DEMAND (Rounded)		**1,344,000**	**GPD**
TOTAL MAXIMUM DAY DEMAND (Rounded)		**2,017,000**	**GPD**

[1]Lot Demand does not include DOFAW Area.

[2] WSS Average Daily Demand for "Schools, Parks".

DEMAND 2 - DWS Demand = 6,000 gpd/acre				
Lot No.	Area (Acres)	Area (sf)	**Total Average Water Demand (gpd)**	**Maximum Potable Water Demand (gpd)**
1	1.12	48983.4	6,747	10,121
2	1.12	48983.4	6,747	10,121
3	1.12	48983.4	6,747	10,121
4	1.12	48983.4	6,747	10,121
5	0.57	24790.7	3,415	5,122
6	0.57	24790.7	3,415	5,122
7	0.57	24790.7	3,415	5,122
8	0.57	24790.7	3,415	5,122
9	0.57	24790.7	3,415	5,122
10	0.57	24790.7	3,415	5,122
11	See Below			
12	1.79	77987.5	10,742	16,113
13	2.03	88293.4	12,162	18,242
14	2.18	95117.1	13,102	19,652
15	3.08	134284.3	18,496	27,745
16	2.27	98715.1	13,597	20,396
17	1.49	65044.7	8,959	13,439
18	1.33	57916.6	7,977	11,966
19	1.10	47911.3	6,599	9,899
20	0.88	38200.4	5,262	7,893
21	1.10	47774.1	6,580	9,871
22	1.05	45943.0	6,328	9,492
23	1.46	63589.2	8,759	13,138
24	1.78	77642.8	10,695	16,042
25	2.18	94982.0	13,083	19,624
26	5.90	256917.8	35,388	53,082
27	4.90	213511.5	29,409	44,114
28	5.18	225428.5	31,051	46,576
29	4.11	179066.5	24,665	36,997
30	2.97	129412.0	17,825	26,738
31	1.80	78614.0	10,828	16,243
32	1.33	57768.0	7,957	11,936
33	1.12	48723.0	6,711	10,067
34	0.87	37782.0	5,204	7,806
35	0.95	41560.0	5,725	8,587
36	1.64	71497.7	9,848	14,772
37	1.84	79943.1	11,011	16,517
38	1.94	84700.9	11,667	17,500
39	2.04	88663.2	12,213	18,319

DEMAND 2 - DWS Demand = 6,000 gpd/acre				
Lot No.	Area (Acres)	Area (sf)	**Total Average Water Demand (gpd)**	**Maximum Potable Water Demand (gpd)**
40	0.77	33463.0	4,609	6,914
41	0.78	34154.0	4,704	7,057
42	0.49	21559.7	2,970	4,454
43	0.59	25792.7	3,553	5,329
44	0.59	25826.0	3,557	5,336
45	0.60	25993.0	3,580	5,370
46	0.68	29747.9	4,098	6,146
47	0.72	31245.6	4,304	6,456
48	0.72	31499.6	4,339	6,508
49	3.35	145750.2	20,076	30,114
50	2.62	113979.2	15,700	23,549
51	2.80	121887.8	16,789	25,183
52	6.78	295181.7	40,659	60,988
53	4.16	181118.0	24,947	37,421
54	4.03	175480.7	24,171	36,256
55	3.52	153446.0	21,136	31,704
56	2.49	108613.0	14,960	22,441
57	3.70	161256.7	22,212	33,318
58	4.15	180815.0	24,906	37,358
59	4.46	194206.0	26,750	40,125
60	4.43	192756.0	26,550	39,826
61	3.82	166378.0	22,917	34,376
62	2.37	103414.0	14,244	21,367
63	5.18	225777.4	31,099	46,648
64	6.15	267879.2	36,898	55,347
65	3.92	170961.0	23,548	35,323
66	3.57	155597.9	21,432	32,148
67	2.61	113787.0	15,673	23,510
68	3.74	162982.4	22,449	33,674
69	3.61	157409.3	21,682	32,523
70	7.04	306473.7	42,214	63,321
71	2.24	97409.0	13,417	20,126
72	2.06	89546.0	12,334	18,501
73	3.31	144032.0	19,839	29,759
74	4.86	211896.9	29,187	43,780
75	3.50	152470.0	21,001	31,502
76	2.39	104170.0	14,348	21,523
77	3.79	165202.0	22,755	34,133
78	3.69	160660.0	22,129	33,194

DEMAND 2 - DWS Demand = 6,000 gpd/acre				
Lot No.	Area (Acres)	Area (sf)	**Total Average Water Demand (gpd)**	**Maximum Potable Water Demand (gpd)**
79	5.28	229812.6	31,655	47,482
80	3.66	159233.0	21,933	32,899
81	3.68	160094.5	22,052	33,077
82	4.36	189759.8	26,138	39,207
83	4.53	197213.8	27,164	40,747
Sub-Total	**210.00**	9147598.8	**1,260,000**	**1,890,000**
11 (See Note)	17.04	742217.6	27,300	40,950
TOTAL	**227.04**	**9,889,816**	**1,287,300**	**1,930,950**

Note: Lot 11 is the DOFAW site. Per previous ATA project Job no. 14-530, Average Day Demand was calculated to be 27,300 gpd.

Project Area:	280.4 acres
Lot Area:	227.0 acres
Road Area:	22.8 acres
Remaining Area (Green Area):	30.6 acres

DEMAND 3 - BASED ON CONSOLIDATED BASEYARDS - 2,000 GPD/ACRE						
LOT WATER DEMAND						
	Area (Acres)	Area (sf)	Building Area Based on 21,000 sf/acre (sf)	Total Average Water Demand (gpd)	**Maximum Day Water Demand (gpd)**	Peak Hour Potable Water Demand (gpm)
Lot Demand[1]	210.00	189,760	NA	420,000	630,000	875
DOFAW	17.04		NA	27,300	40,950	57
Sub-Total Lots	**227.04**		NA	447,300	670,950	932
Sub-Total Lots (Rounded)				**447,000**	**671,000**	

OTHER IRRIGATION DEMANDS - DWS Standards			
Road Areas		22.8	Acres
Irrigated Road Area	40%	9.1	Acres
Irrigation Unit Demand[2]		1,700	gpd/acre
Sub-Total Road Irrigation Demand		15,500	gpd
Green Area		30.6	Acres
Irrigated Green Area	80%	24.4	Acres
Irrigation Unit Demand[2]		1,700	gpd/acre
Sub-Total Green Area Irrigation Demand		41,600	gpd
Sub-Total Average Day Irrigation Demand (rounded)		**57,000**	**gpd**
Sub-Total Maximum Day Irrigation Demand (rounded)		**86,000**	**gpd**
TOTAL AVERAGE DAY DEMAND (Rounded)		**504,000**	**GPD**
TOTAL MAXIMUM DAY DEMAND (Rounded)		**757,000**	**GPD**

[1]Lot Demand does not include DOFAW Area.

[2] WSS Average Daily Demand for "Schools, Parks".

DEMAND 3 - Based on Consolidated Baseyard - 2,000 gpd/acre					
Lot No.	Area (Acres)	Area (sf)	Building Area Based on 21,000 sf/acre (sf)	**Total Average Water Demand (gpd)**	**Maximum Potable Water Demand (gpd)**
1	1.12	48983.4	NA	2,249	3,374
2	1.12	48983.4	NA	2,249	3,374
3	1.12	48983.4	NA	2,249	3,374
4	1.12	48983.4	NA	2,249	3,374
5	0.57	24790.7	NA	1,138	1,707
6	0.57	24790.7	NA	1,138	1,707
7	0.57	24790.7	NA	1,138	1,707
8	0.57	24790.7	NA	1,138	1,707
9	0.57	24790.7	NA	1,138	1,707
10	0.57	24790.7	NA	1,138	1,707
11	See Below				
12	1.79	77987.5	NA	3,581	5,371
13	2.03	88293.4	NA	4,054	6,081
14	2.18	95117.1	NA	4,367	6,551
15	3.08	134284.3	NA	6,165	9,248
16	2.27	98715.1	NA	4,532	6,799
17	1.49	65044.7	NA	2,986	4,480
18	1.33	57916.6	NA	2,659	3,989
19	1.10	47911.3	NA	2,200	3,300
20	0.88	38200.4	NA	1,754	2,631
21	1.10	47774.1	NA	2,193	3,290
22	1.05	45943.0	NA	2,109	3,164
23	1.46	63589.2	NA	2,920	4,379
24	1.78	77642.8	NA	3,565	5,347
25	2.18	94982.0	NA	4,361	6,541
26	5.90	256917.8	NA	11,796	17,694
27	4.90	213511.5	NA	9,803	14,705
28	5.18	225428.5	NA	10,350	15,525
29	4.11	179066.5	NA	8,222	12,332
30	2.97	129412.0	NA	5,942	8,913
31	1.80	78614.0	NA	3,609	5,414
32	1.33	57768.0	NA	2,652	3,979
33	1.12	48723.0	NA	2,237	3,356
34	0.87	37782.0	NA	1,735	2,602
35	0.95	41560.0	NA	1,908	2,862
36	1.64	71497.7	NA	3,283	4,924
37	1.84	79943.1	NA	3,670	5,506
38	1.94	84700.9	NA	3,889	5,833
39	2.04	88663.2	NA	4,071	6,106

DEMAND 3 - Based on Consolidated Baseyard - 2,000 gpd/acre					
Lot No.	Area (Acres)	Area (sf)	Building Area Based on 21,000 sf/acre (sf)	**Total Average Water Demand (gpd)**	**Maximum Potable Water Demand (gpd)**
40	0.77	33463.0	NA	1,536	2,305
41	0.78	34154.0	NA	1,568	2,352
42	0.49	21559.7	NA	990	1,485
43	0.59	25792.7	NA	1,184	1,776
44	0.59	25826.0	NA	1,186	1,779
45	0.60	25993.0	NA	1,193	1,790
46	0.68	29747.9	NA	1,366	2,049
47	0.72	31245.6	NA	1,435	2,152
48	0.72	31499.6	NA	1,446	2,169
49	3.35	145750.2	NA	6,692	10,038
50	2.62	113979.2	NA	5,233	7,850
51	2.80	121887.8	NA	5,596	8,394
52	6.78	295181.7	NA	13,553	20,329
53	4.16	181118.0	NA	8,316	12,474
54	4.03	175480.7	NA	8,057	12,085
55	3.52	153446.0	NA	7,045	10,568
56	2.49	108613.0	NA	4,987	7,480
57	3.70	161256.7	NA	7,404	11,106
58	4.15	180815.0	NA	8,302	12,453
59	4.46	194206.0	NA	8,917	13,375
60	4.43	192756.0	NA	8,850	13,275
61	3.82	166378.0	NA	7,639	11,459
62	2.37	103414.0	NA	4,748	7,122
63	5.18	225777.4	NA	10,366	15,549
64	6.15	267879.2	NA	12,299	18,449
65	3.92	170961.0	NA	7,849	11,774
66	3.57	155597.9	NA	7,144	10,716
67	2.61	113787.0	NA	5,224	7,837
68	3.74	162982.4	NA	7,483	11,225
69	3.61	157409.3	NA	7,227	10,841
70	7.04	306473.7	NA	14,071	21,107
71	2.24	97409.0	NA	4,472	6,709
72	2.06	89546.0	NA	4,111	6,167
73	3.31	144032.0	NA	6,613	9,920
74	4.86	211896.9	NA	9,729	14,593
75	3.50	152470.0	NA	7,000	10,501
76	2.39	104170.0	NA	4,783	7,174
77	3.79	165202.0	NA	7,585	11,378
78	3.69	160660.0	NA	7,376	11,065

DEMAND 3 - Based on Consolidated Baseyard - 2,000 gpd/acre					
Lot No.	Area (Acres)	Area (sf)	Building Area Based on 21,000 sf/acre (sf)	**Total Average Water Demand (gpd)**	**Maximum Potable Water Demand (gpd)**
79	5.28	229812.6	NA	10,552	15,827
80	3.66	159233.0	NA	7,311	10,966
81	3.68	160094.5	NA	7,351	11,026
82	4.36	189759.8	NA	8,713	13,069
83	4.53	197213.8	NA	9,055	13,582
Sub-Total	**210.00**	9147598.8	-	**420,000**	**630,000**
11 (See Note)	17.04	742217.6		27,300	40,950
TOTAL	**227.04**	**9,889,816**		**447,300**	**670,950**

Note: Lot 11 is the DOFAW site. Per previous ATA project Job no. 14-530, Average Day Demand was calculated to be 27,300 gpd.

APPENDIX C

DWS Water System Correspondence

MUNEKIYO HIRAGA
Planning. Project Management. Sustainable Solutions.

Michael T. Munekiyo
PRESIDENT
Karlynn K. Fukuda
EXECUTIVE VICE PRESIDENT
Mark Alexander Roy
VICE PRESIDENT
Tessa Munekiyo Ng
VICE PRESIDENT

December 22, 2015

REVISED MEETING MEMORANDUM

Date of Meeting: November 23, 2015

From: Colleen Suyama, Senior Associate, Munekiyo Hiraga

Subject: State of Hawai'i Pulehunui Master Plan

Participants: Russell Tsuji and Daniel Ornellas, Department of Land and Natural Resources, Land Division
Paul Meyer and Tammy Yeh, Department of Water Supply
Ivan Nakatsuka, Austin Tsutsumi & Associates, Inc.
Tessa Munekiyo Ng and Colleen Suyama, Munekiyo Hiraga

Meeting Purpose: A meeting was held on November 23, 2015 to discuss water needs for the Proposed Pulehunui Master Plan by the Department of Land and Natural Resources (DLNR)

DISCUSSION ITEMS

1. Paul Meyer, Deputy Director, Department of Water Supply (DWS) indicated that with anticipated new source development in Central Maui, including the proposed Iao Water Treatment Plant and two (2) proposed wells in Waikapu, there appears to be enough source to accommodate the proposed DLNR master plan. As such, connection to the County of Maui (COM) Municipal Water System is an infrastructure option. The DWS requested the timeframe when the various phases of the Master Plan will be developed.

   Russell Tsuji indicated that it is anticipated that land entitlements will take 3-5 years to complete and that Phase 1 of the project will be built within 5-10 years after entitlements are received and funding obtained. Buildout of the project will take 10-20 years to complete.

2. Tammy Yeh indicated that the DWS will allow the Division of Forestry and Wildlife (DOFAW) baseyard project to connect to the COM municipal water system. Comments from the Fire Department indicated fire protection requirements for the baseyard project is 1,000 gallons per minute (GPM). Based on fire protection the DWS has determined the existing 8-inch water line is adequate for the project and is leaning towards not requiring the DOFAW project to provide a water storage tank.

   The DOFAW project is a much smaller project and the DWS is aware of the Pulehunui Master Plan effort. As such, a water storage tank can be delayed until the Pulehunui Master Plan is initiated.

   Tammy Yeh indicated that the DWS will respond to DOFAW's previously submitted letter request regarding water source for the proposed project in the next few weeks.

3. DWS noted that the Pulehunui Master Plan will be required to provide a new water storage tank to accommodate the maximum daily demand for water which will determine the size of the tank needed. With the approval of the DWS, the storage tank will need to be located at an appropriate elevation to allow gravity flow to the master plan site and be as close as possible to the 36-inch water transmission line in order to minimize the length of the water line from the tank to the connection point with this COM transmission line. P. Meyer suggested a storage tank in upper Waikapu on Waiko Road where it can connect to the 36-inch waterline.

4. When asked whether there is a potential for joint development of the storage tank the DWS did not indicate whether it was or was not a possibility. Further discussion will need to take place with the DWS.

5. The DWS indicated the lot areas will determine the meter size for the proposed lots in the master plan, as well as, the storage needs and storage fees for the project. It is estimated that a 1 million gallon tank will cost between $2.5 to $3.0 million.

There being no other business, the meeting was concluded.

Very truly yours,

Colleen Suyama
Senior Associate

CS:la
cc: Russell Tsuji, DLNR, Land Division
Daniel Ornellas, DLNR, Land Division-Maui
Paul Meyer, Department of Water Supply
Tammy Yeh, Department of Water Supply
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DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

KEKOA KALUHIWA
FIRST DEPUTY

JEFFREY T. PEARSON, P.E.
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

ENGINEERING DIVISION
POST OFFICE BOX 373
HONOLULU, HAWAII 96809

AUG 11 2016

RECEIVED
AUG 15 2016

AUSTIN, TSUTSUMI & ASSOCIATES, INC
Honolulu, Hawaii 96817-5031

Mr. Dave Taylor, Director
Department of Water Supply
County of Maui
200 South High Street
Kalana O Maui Bldg., 5th Floor
Wailuku, Hawaii 96793-2155

Dear Mr. Taylor:

Division of Forestry and Wildlife (DOFAW) Baseyard at Pulehunui

On February 13, 2015, we respectfully requested potable and fire protection water service from the Maui Department of Water Supply (DWS) for the proposed Division of Forestry and Wildlife Baseyard (DOFAW) at Pulehunui. See **Exhibit "A"**. At the time of our request, the domestic and irrigation demand was estimated at 17,600 gallons per day (gpd) (average daily demand).

In June 2016, our consultant, Munekiyo Hiraga, followed up with Ms. Tammy Yeh of your staff regarding the status of your Department's review of our request. We understand that the request is in process and Ms. Yeh noted that should updated information be available, it can be submitted to DWS for review. We are writing today to provide you with updated information on the project's anticipated water needs.

A Preliminary Engineering and Drainage Report (PEDR) was prepared for the subject project in support of the Draft Environmental Assessment (EA) that was published March 8, 2016. The PEDR estimated the average daily demand for the project to be 16,700 gpd for Phase 1 and 7,600 gpd for Phase 2, for a total of 24,300 gpd. See **Exhibit "B"**.

The DWS submitted a comment letter, dated April 22, 2016, providing comment on the Draft EA. See **Exhibit "C"**. The Department commented that the actual water demand for the project should be higher because approximately 15 acres of the project site, including four (4) acres of dry land forest, were not accounted for in the water demand calculations in the PEDR of the Draft EA. Austin, Tsutsumi, and Associates, Inc. (ATA), the project engineer, clarified that for the purposes of the PEDR analysis, approximately 6.9 acres of the project site was assumed to be irrigated, while the remaining 13.4 acres would not be irrigated. Included in the 13.4 acres of non-irrigated areas are building, pavement/gravel areas, and non-irrigated natural areas, including the dryland forest. Based on these assumptions, the PEDR concluded that the total water demand would be 24,300 gpd.

Following receipt of DWS' comment letter on the Draft EA, the project team reconsidered the assumptions with respect to irrigation and decided to include an allocation for minimal irrigation for the dryland forest. While the dryland forest would not be subject to standard irrigation levels, some irrigation would be used in order to establish the plants and to maintain the plants during low rainfall events to keep the plants viable. Based on DOFAW's past experience, DOFAW anticipates irrigation for the dryland forest to average 3,000 gpd, with a maximum of 5,000 gpd. Utilizing this assumption, the total project average day demand would be 27,300 gpd instead of the 24,300 gpd stated in the Draft EA. See **Exhibit "D"** for updated water calculations.

We respectfully request potable water service for the proposed DOFAW Baseyard at Pulehunui project, which is estimated to have an average daily demand of 27,300 gpd. However, we note that during building permit review, refined water demand calculations will be submitted in accordance with DWS standards.

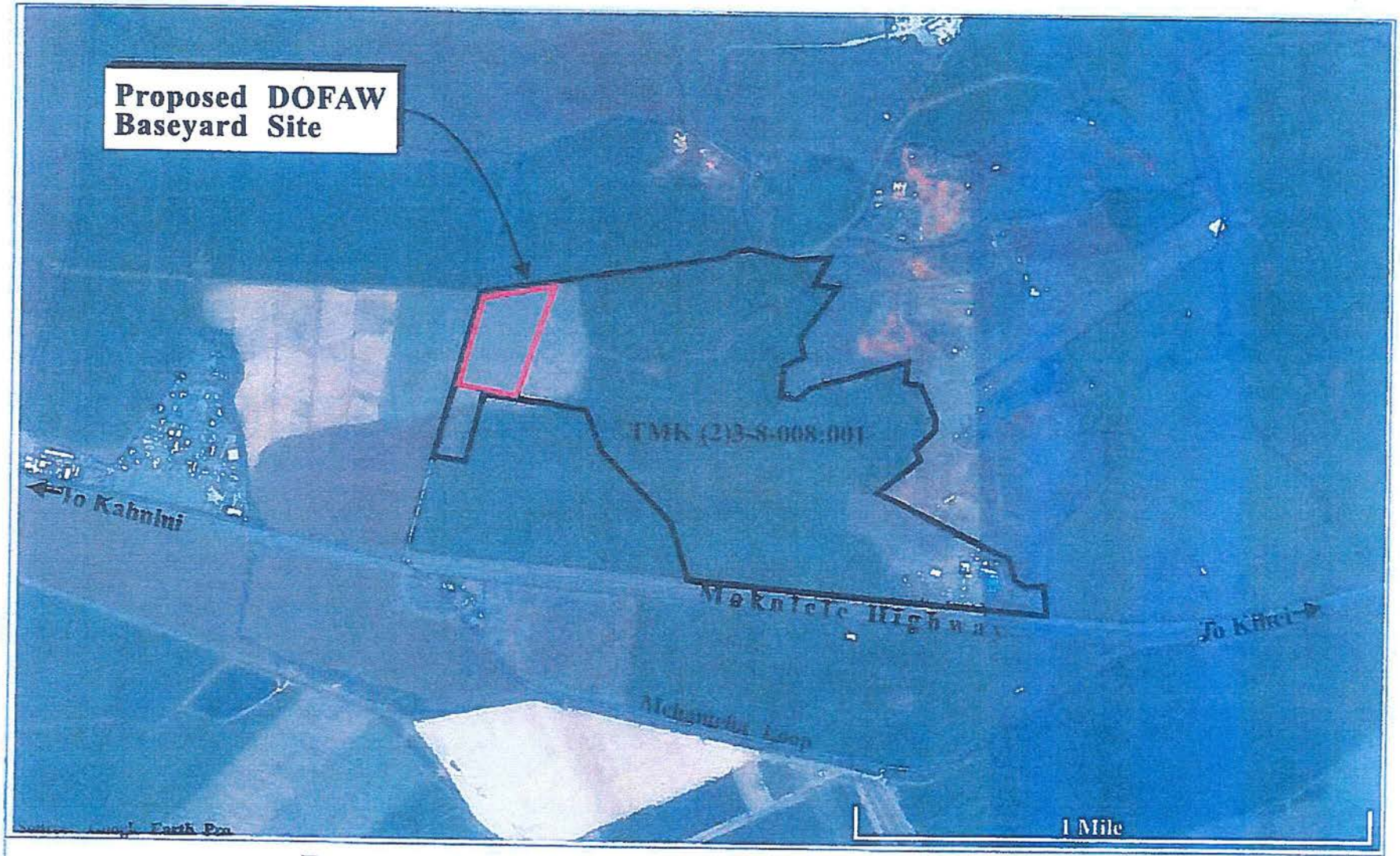
Thank you for your consideration of our request. If you have any questions, please do not hesitate to contact Mr. Gayson Ching of my staff at (808)587-0232, or via email at gayson.y.ching@hawaii.gov.

Sincerely,

CARTY S. CHANG
Chief Engineer

Attachments

c: Tessa Munekiyo Ng, AICP, Munekiyo Hiraga (w/attachments)
Ivan Nakatsuka, Austin, Tsutsumi and Associates, Inc. (w/attachments)



Proposed DOFAW Baseyard at Pulehunui

Property Location Map

Prepared for: State of Hawaii, Department of Land and Natural Resources

MUNEKIYO & HIRAGA, INC.

SOH DLNR DOFAW by Pulehunui PropertyLocation

DAVID Y. IGE
GOVERNOR OF HAWAII

CARTY S. CHANG
INTERIM CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DANIEL S. QUINN
FIRST DEPUTY

W. ROY HARDY
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

ENGINEERING DIVISION
POST OFFICE BOX 373
HONOLULU, HAWAII 96809

FEB 13 2015

Mr. Dave Taylor, Director
Department of Water Supply
County of Maui
200 South High Street
Wailuku, Maui, Hawaii 96793-2155

Dear Mr. Taylor:

Division of Forestry and Wildlife (DOFAW)Baseyard at Pulehunui

Pursuant to a meeting held with Mr. Paul Meyer of your staff on September 4, 2014, we respectfully submit this request for potable and fire protection service from Maui Department of Water Supply (DWS) for the subject project. Attached is a location map for this proposed project, located on a 20-acre portion of a parcel identified as TMK (2)3-8-008:001, for which the major components will be an office building(s), warehouse and nursery. We are aware that there is an existing 8-inch DWS waterline along Kamaaina Road (from DWS's 12-inch waterline in Mokulele Highway) that may be able to provide our water service and fire protection request.

The office building(s) and warehouse will have approximate floor areas of 20,000 square feet and 30,000 square feet, respectively. The nursery is expected to be developed in two phases: an initial one acre phase and a second phase of an additional one acre. The estimated maximum occupancy is expected to be 80 day-time only workers.

Attached is a calculation of water demand for this project based on DWS's Water System Standards, with resultant initial combined domestic and irrigation demand of 12,600 gpd, and with the future expansion of the nursery to two acres, 17,600 gpd.

Assuming that "light industry" is the most analogous land use for this project in Table 100-19 of DWS's Water System Standards, the fire flow requirement for this project would be 2,000 gallons per minute for 2 hours. This would likely require replacement of the 8-inch waterline within Kamaaina Road with a 12-inch waterline. However, we would appreciate your consideration of a lesser flow requirement, which may deem this waterline replacement unnecessary.

Thank you for your consideration of our request. Should you have any questions, please call Mr. Gayson Ching of my staff at 587-0232.

Sincerely,

fr CARTY S. CHANG
Chief Engineer

Attachments

EXHIBIT A

Projected DOFAW Water Demands

Land Use Designation	Land Area (acres)	Building Area (sf)	Average Day Unit Demand (gpd/1000 sf)	Average Daily Demand (gpd)
Office Building		20,000	140	2,800
Warehouse		30,000	140	4,200
Auto Shop		2,400	140	336
Gym, shower & locker		2,000	140	280
			Total (Domestic)	7,600
Initial Nursery	1.00		5,000	5,000
			Initial Total (Irrigation + Domestic)	12,600
Future Nursery	2.00		5,000	10,000
			Future Total (Irrigation + Domestic)	17,600

the buildings is based on the WSS for "Commercial/Industrial Mix", which includes irrigation demand. The demand of 5,000 gallons per acre for the nursery is based on the WSS for "Agriculture", and the demand of 1,700 gallons per acre for the training field is based on the WSS for "Schools, Parks". Table 3 shows the projected water demands.

Table 3: Projected DOFAW Water Demands

Land Use Designation	Land Area (acres)	Building Area (sf)	Average Day Unit Demand (gpd/1000 sf)	Average Daily Demand (gpd)	Maximum Day Demand (gpd)
Phase 1					
Office Building, including gym, shower and locker room		25,455	140	3,564	5,346
Warehouse		20,000	140	2,800	4,200
Auto Shop		2,400	140	336	504
Nursery	2.0		5,000	10,000	15,000
Phase 1 Total				**16,700**	**25,000**
Phase 2					
Training Field	1.3		1,700	2,210	3,315
Wildlife Lab		5,000	140	700	1,050
Nursery Office/ Greenhouse		5,000	140	700	1,050
Auto Shop Expansion		1,200	140	168	252
Warehouse Expansion		10,000	140	1,400	2,100
Warehouse New		15,000	140	2,100	3,150
Wash Bay*		2,400		300	300
Phase 2 Total				**7,600**	**11,200**
Total – Phase 1 and Phase 2				**24,300**	**36,200**

*Water demand for Wash Bay based on the assumption that 5 cars will be washed per day using 60 gallons per wash.

2. Water System

DWS's existing transmission and distribution lines will be utilized, to the extent possible, to convey water needed for the project. Service to the project site would be provided by connecting to either the existing 8-inch cast iron waterline in Kamaaina Road or a new 12-inch ductile iron

EXHIBIT D

ALAN M. ARAKAWA
Mayor

DAVID TAYLOR, P.E.
Director

PAUL J. MEYER
Deputy Director

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2155
www.mauiwater.org

April 22, 2016

Mr. Paul F. Fasi, Current Planning Division
Department of Planning
County of Maui
250 South High Street
Wailuku, Hawaii 96793

Dear Mr. Fasi:

RE: I.D.: SUP1 2016/0001, CP 2016/0002 and Draft Environmental Assessment (DEA)
TMK: (2) 3-8-008:001 (POR.)
Project Name: State of Hawaii Division of Forestry & Wildlife (DOFAW)

Thank you for the opportunity to offer the following comments on the above referenced project. The Department of Water Supply (DWS) understands that if funding is not available to develop the Pulehunui Baseyard, renovation of the existing Kahului Baseyard is also assessed in the DEA as a secondary alternative. If the secondary choice is selected, separate permit applications would be submitted for the Kahului Baseyard location. This letter is confined to a comment on the first alternative.

Source Availability, and System Infrastructure and Consumption
The project area is served by DWS's Central Maui System and the main sources of water are the designated Iao aquifer, Waihee aquifer, Iao tunnel and Iao-Waikapu Ditch from the designated Na Wai Eha.

This Tax Map Key parcel is served by several DWS meters, and an 8-inch waterline runs parallel to the northwest property line, however, there is no water meter servicing the project site. The applicant states that they are actively consulting with DWS engineers to accommodate the development. Required water system improvements must meet DWS standards and are to be delineated in the EA.

It is stated in the DEA that the estimated water demand for Phases 1 and 2 would be 24,300 gallons per day (gpd). However, based on system standards, the approximate consumption for this project would be between 49,800 and 99,300 gallons per day. Approximately 15 acres (which includes the 4 acre dry land forest) of the 20.3 project site is unaccounted for in the demand table. Please state in the EA what, if any, irrigation will be required to establish the dry land forest. Empirical data shows that water demand in this dry area is much higher than other parts of Maui.
Domestic and Irrigation calculations will be required in the building permit process, as well as a backflow preventer.

EXHIBIT C

Mr. Paul F. Fasi
State of Hawaii DOFAW Baseyard

Conservation and Pollution Prevention
We are pleased to note that approximately 6 of the 20.3 acres will be used to support a nursery and dry land forest restoration area and that Indoor and Outdoor Conservation Measures will be considered. The proposed project overlies the Kahului aquifer, with a sustainable yield of 1 million gallons per day, according to the Commission on Water Resource Management. In order to protect ground and surface waters, Best Management Practices (BMPs) designed to minimize infiltration and runoff should be noted in the EA and implemented during construction, including:

- Prevent cement products, oil, fuel and other toxic substances from falling or dripping on the ground as this can cause them to leach into the ground. Store them in proper containers on non-porous surfaces and protect from the elements.
- Properly and promptly dispose of all loosened and excavated soil and debris material.
- Properly install and maintain erosion control barriers such as silt fencing or straw bales.
- Retain ground cover until the last possible date.
- Disturb the smallest area possible.
- Apply biocides only during dry periods of low rainfall to minimize chemical run-off.
- Keep run-off on site.

Should you have any questions, please contact staff planner Marti Buckner at (808) 463-3104 or marti.buckner@co.maui.hi.us.

Sincerely,

Dave Taylor, P.E., Director
mlb
cc: DWS Engineering Division

Table 3: Projected DOFAW Water Demands

Land Use Designation	Land Area (acres)	Building Area (sf)	Avg. Day Unit Demand	Unit	Avg. Daily Demand (gpd)	Maximum Day Demand (gpd)
Phase 1						
Office Building, including gym, shower and locker room		25,455	140	gpd/1000sf	3,564	5,346
Warehouse		20,000	140	gpd/1000sf	2,800	4,200
Auto Shop		2,400	140	gpd/1000sf	336	504
Nursery	2.0		5,000	gpd/acre	10,000	15,000
Phase 1 Total					**16,700**	**25,000**
Phase 2						
Training Field	1.3		1,700	gpd/acre	2,210	3,315
Wildlife Lab		5,000	140	gpd/1000sf	700	1,050
Nursery Office/ Greenhouse		5,000	140	gpd/1000sf	700	1,050
Auto Shop Expansion		1,200	140	gpd/1000sf	168	252
Warehouse Expansion		10,000	140	gpd/1000sf	1,400	2,100
Warehouse New		15,000	140	gpd/1000sf	2,100	3,150
Wash Bay*		2,400	300	gpd	300	300
Dryland Forest**	4.0		3,000	gpd	3,000	5,000
Phase 2 Total					**10,600**	**16,200**
Total – Phase 1 and Phase 2					**27,300**	**41,200**

*Water demand for Wash Bay based on the assumption that 5 cars will be washed per day using 60 gallons per wash.

**Water demand for Dryland Forest will range from an average day demand of 3,000 gpd to a maximum day demand of 5,000 gpd.

EXHIBIT D

ALAN M. ARAKAWA
Mayor

DAVID TAYLOR, P.E.
Director

PAUL J. MEYER
Deputy Director

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
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www.mauiwater.org

RECEIVED
AUG 26 2016
AUSTIN, TSUTSUMI & ASSOCIATES, INC
Honolulu, Hawaii 96817-5031

August 22, 2016

Mr. Gayson Ching
State of Hawaii
Department of Land and Natural Resources
Engineering Division
P.O. Box 373
Honolulu, HI 96809

Dear Mr. Ching:

Subject: Division of Forestry and Wildlife (DOFAW) Baseyard at Pulehunui
TMK (2) 3-8-008: por. of 001, Pulehunui, Maui, Hawaii

We received your letter dated August 11, 2016 requesting potable water service for the proposed DOFAW Baseyard project, which will cover approximately 20.29 acres of the 398.096-acre parcel and comprise mainly of an office building(s), warehouse and nursery. Also stated, the total project average day demand is estimated at 27,300 gallons. It is our understanding that although this proposed project is part of the overall DLNR Pulehunui Master Plan you are actively trying to move ahead of the master plan.

The nearest Department infrastructure is an existing 8-inch waterline along Kamaaina Road, which is connected to the existing 36-inch Central Maui Water Transmission System (CMWTS). The source water for the CMWTS are groundwater wells in the Iao Aquifer System that is stored in the existing 1.0-million gallon (MG) Waihee Tank. The Waihee Tank services portions of Waihee, Maalaea, Pulehunui, and South Maui.

Based on our calculations, the Waihee Tank is unable to support the existing services and the proposed DOFAW Baseyard for both domestic and fire protection purposes. Therefore, a storage tank to service the project's domestic and fire flow usage is required. The smallest storage tank acceptable to the Department is 0.1 MG. However, stagnation is of concern due to the size differential between the estimated DOFAW Baseyard average day demand of 27,300 gallons and the 0.1 MG tank requirement. Therefore, the Department is willing to provide water service for the project without the need to construct a storage tank. This postponement is only being provided to this "standalone" project and initiation of the next phase of the master plan will require construction of the storage tank.

"By Water All Things Find Life"

Printed on recycled paper

Please be aware that during the building permit review, water demand calculations and plans in accordance with our standards, signed and stamped by a licensed engineer will need to be submitted for our review and approval. The Department of Fire and Public Safety will provide the fire flow requirements, which may require additional water system improvements, such as upsizing of the existing 8-inch waterline along Kamaaina Road.

If you have any questions, please do not hesitate to contact Tammy Yeh at (808) 270-7835 or via email at tammy.yeh@mauicounty.gov.

Sincerely,

DAVID TAYLOR, P.E.
Director

TY/mkm

cc: Tessa Munekiyo Ng, AICP (Munekiyo Hiraga)
Ivan Nakatsuka (Austin, Tsutsumi and Associates, Inc.)

APPENDIX D

TNWRE Memorandum

Tom Nance Water
Resource Engineering

No. of pages: 14
Email: colleen@munekiyohiraga.com
lappelgate@atahawaii.com
greg@tnwre.com
todd@tnwre.com

Original ☐ will ☑ will not be mailed to you.

August 14, 2017
17-112.r2 | 17-27

MEMORANDUM

To: Colleen Suyama – Munekiyo Hiraga
Lisa Appelgate – Austin Tsutsumi & Associates, Inc.

From: Tom Nance

Subject: Recommended Locations and Layout of the Supply Alternative of Onsite Wells and Reverse Osmosis Treatment for the Proposed DLNR Industrial and Business Park in Puunene, Maui

Introduction

Austin Tsutsumi and Associates (ATA) has identified the following three alternatives for water supply for the proposed 280-acre DLNR Industrial and Business Park in Puunene, Maui:

- Supply from the Maui County Department of Water Supply (MDWS);
- Surface water from the East Maui Irrigation ditch system; and
- Use of onsite groundwater.

This memo and its attachments describe the required improvements necessary to implement the third of the three alternatives. The groundwater beneath the project exists in a slightly brackish basal lens. Its use for the project will require reverse osmosis (RO) treatment which will remove dissolved salts to produce water suitable for drinking water use.

Projected Water Supply Required for the Groundwater Supply Alternative

The water system using onsite brackish water wells and RO treatment would be a private system. As such, ATA has calculated a supply requirement that is not based on MDWS water use guidelines. Its estimate assumes average use of 2000 gallons per day (GPD) per acre on 214 acres of the 280-acre project site and irrigation of roadways, a park, and landscape buffer at 1700 GPD/acre. Based on these assumptions, total average use at the project's full build out and occupancy is projected by ATA to be 503,000 GPD.

Specific Design and Sizing Criteria for the Onsite Wells and RO Treatment System

Maximum Day Use. All water system supply components must be sized for the maximum day use which is defined as 1.5 times the average use or 755,000 GPD for the DLNR Industrial and Business Park project. The 1.5 factor conforms to MDWS standards.

Well and RO Operating Times. Well and RO operating times to provide the maximum day supply requirement shall be 24 hours a day. MDWS' standard is 16 hours. However, the wells will be drawing from a thin basal lens. Controlling potential salinity intrusion requires continuous pumping of the wells at the lowest practical rate to meet the project's required supply. For the maximum day use of 755,000 GPD, of the RO treatment process will need to produce 525 gallons per minute (GPM) continuously.

Assumed Well Water Quality. Three nearby wells provide the best indication of the likely salinity level of wells developed on the project site (refer to Figure 1 for their locations). Wells 4927-02 and -03 in the Pulehunui Industrial Park produced water with chlorides in the range of 230 milligrams per liter (MG/L) when pump tested at 300 GPM. They will both be outfitted with 165 GPM pumps. Well 5027-01 in the Central Maui Baseyards produced chlorides of 360 MG/L when also pump tested at 300 GPM. It is outfitted with a 250 GPM pump. Based on these results, it is assumed that onsite wells would deliver water with chlorides in the range of 270 to 350 MG/L, equivalent to total dissolved solids (TDS) in the range of 825 to 1075 MG/L.

RO Treatment Configuration. Based on the design of the RO system for the nearby Pulehunui Industrial Park and on the actual recovery rates for the RO system for the Hualalai Resort on the Big Island, Figure 2 is a schematic of the configuration of the RO system with expected recovery rates. Several aspects are worth noting:

- 70 percent of water pumped by the wells would be converted to the drinking water supply. To produce the maximum day for 525 GPM drinking water requirement, well pumpage would need to total 750 GPM.
- The drinking water supply would be a blend of the RO product water (referred to as the permeate) and untreated well water in a 55:15 ratio.
- The well water which is run through the RO filtration system would have a 65 percent recovery rate.
- The "wastewater" of the RO process, referred to as the concentrate, would be of suitable salinity for irrigation reuse on salt tolerant grasses and plants in well drained soils (expected chlorides of 850 to 900 MG/L and TDS of 2600 to 2750 MG/L). However, two onsite disposal wells would be needed, one for back up. At a minimum, the Department of Health will require the disposal wells

to be at least 1320 feet away from the supply wells. They should be located downgradient from the supply wells, which for this project means to the south toward Maalaea Bay.

- The supply wells would pump directly into an RO treatment train of appropriately sized capacity, not into a raw water storage tank. The blended product water (RO permeate and untreated well water) would then be pumped into an at-grade, steel storage tank.

Number of Wells and Well Pump Capacities. To meet the maximum day requirement of 525 GPM, three wells of 250 GPM pump capacities would be required, each pumping to a separate RO treatment train. Each of these well pump and RO treatment trains would produce 175 GPM of blended product water. A fourth well and treatment train to provide back up capacity may ultimately be required. However, based on actual use of similar projects on Maui, it is recommended that initial construction be limited to three wells and three RO treatment trains with provisions to add a fourth at a future time if it is ultimately needed. Figure 3 shows the projected distribution of water from each 250 GPM well and its RO treatment train.

Storage Tank Sizing Criteria. Two storage volume design criteria, both conforming to MDWS standards, are appropriate to use for this project. As indicated below, the first of the two criteria governs and an 0.80 million gallon (MG) storage tank would be required.

- Provide storage equivalent to the maximum day use without credit for inflow from wells and RO treatment. For this project, the 755,000 GPD maximum day use translates to a storage tank of 0.80 MG capacity.
- Provide storage capacity equivalent to the fire flowrate (2500 GPM for 2 hours) and coincident maximum day demand (525 GPM), with credit for RO inflow by two of the three well and RO treatment trains (350 GPM) and the storage tank 3/4 full at the start of the fire. This translates to 372,000 gallons:

$$\text{Storage} = 4/3\ (2500 + 525 - 350)\ (120) = 372{,}000$$

Recommended Well, RO Plant, and Storage Tank Locations and Layout

Figure 4 illustrates the recommended wells, RO plant, and storage tank locations and layout. They are located at the north end of the project site, abutting the 20-acre DOFAW parcel. Lateral spacing between the wells would be about 350 feet. The flag lot for the RO plant, at grade 0.80 MG storage tank, booster pump stations, and the middle one of the three wells would be about 1.05 acres. Two booster pump stations would be required, one to pressurize the distribution system and the second for fire flow. Exhibit 1 is a cost estimate for all of these improvements, including two disposal wells but not including

the distribution pipelines and the RO concentrate line. Total cost, including engineering and contingency, is estimated to be $7.3 million.

Long-Term Viability of Wells Drawing from the Kahului Basal Aquifer

During the plantation period, average annual pumpage by wells from the Kahului Aquifer often exceeded 60 MGD (Figure 12 on p. 22 of Gingerich, 2008), with as much as 25 MGD coming from HC&S' Well 5128-02 alone (Figure B-1 on p. 86 of Gingerich, 2008; its location is shown on Figure 1). These very high pumping rates were primarily sustained by the import of surface water from the east and west Maui irrigation systems, leakage from ditches and unlined reservoirs, and irrigation return from the sugarcane fields. With the closing of HC&S and unknowns regarding the future agricultural use of the former sugarcane fields, the question of the long-term viability of the Kahului Aquifer as a source of supply is appropriate to consider.

Areal Extent and Geologic Circumstance. As delineated by the State Commission on Water Resource Management (CWRM), the aquifer's entire area is 27.8 square miles. Discharge from the aquifer into the marine environment occurs along its two shorelines, Kahului Harbor to the north and Maalaea Bay to the south. Both of these shorelines consist of caprock and alluvium which overlie the water bearing Honomanu volcanics from Haleakala at depth. Both of these sedimentary formations impede the intrusion of seawater, enabling the salinity of wells further inland to be lower than would otherwise be expected, an obvious beneficial effect. In calculations of the aquifer's groundwater recharge, it has been typically assumed that direct recharge on the land surface can only reach the Honomanu volcanics in areas that are not covered by the caprock. This assumption leaves a net area for direct recharge by rainfall of 9.54 square miles (Yuen, 1990). If areas covered by both of the sedimentary formations (caprock and alluvium) are excluded, it leaves a net area of just 5.62 square miles for direct infiltration to groundwater recharge (Table 14 on p.44 of Engott & Vana, 2007).

Sources of Groundwater Recharge to the Kahului Aquifer. The aquifer has a number of sources of groundwater recharge in addition to the rainfall directly on it. They include the following:

- Rainfall directly on the aquifer itself;
- Surface runoff from Haleakala and the West Maui Mountain;
- Groundwater under flow from Haleakala and the West Maui Mountain;
- Leakage from irrigation ditches, unlined storage reservoirs, and unlined storm water runoff detention basins;
- Seepage from individual wastewater disposal systems;
- Storm water runoff disposed of in numerous injection wells in the Kahului Town area; and

- Return flow from agricultural and landscape irrigation.

The closing of HC&S puts the contribution of at least two of these sources of groundwater recharge in question, but it also may reduce or even eliminate the 25 to 30 MGD of HC&S well pumpage that was occurring at the end of sugarcane cultivation.

Regulatory Sustainable Yield. The 1990 Water Resources Protection Plan (WRPP) prepared by George A. L. Yuen & Associates for the CWRM established the sustainable yield of the Kahului Aquifer at 1.0 MGD based solely on the rainfall recharge occurring on the 9.54 square mile area of the aquifer not covered by caprock. All other sources of the aquifer's recharge listed in the bullet points above were not considered in establishing the sustainable yield, despite the fact that they are known to occur and are of greater magnitude than the aquifer's direct rainfall recharge. The 2008 update of the WRPP (Wilson Okamoto Corporation, 2008) left the sustainable yield amount of 1.0 MGD unchanged. Despite the amount of ongoing pumpage (primarily by HC&S) being more than 25 times the regulatory sustainable yield, the CWRM continued to issue well construction permits for new wells in the aquifer, a tacit acknowledgement that the aquifer's sustainable yield is far greater than 1.0 MGD.

The 2017 update of the WRPP is expected to be out for public review this year. Based on a preliminary draft circulated to hydrologic professionals for comment, it will show a possible range of the Kahului Aquifer's sustainable yield from 1 to 10 MGD, the latter based on a recharge calculation of 23.15 MGD by the USGS for the aquifer's non-caprock area (revised Table 3 of Johnson, Engott, and Bassiouni, 2014). As shown on the preliminary draft however, it will retain the 1 MGD amount for the aquifer's sustainable yield. Based on the CWRM's past practice, it can be expected that it will continue to issue permits for new wells, including those necessary for the project evaluated herein.

Future Prospects. The extent of future agricultural use of the former HC&S sugarcane fields is not known. Further, the extent to which the future agriculture irrigation is supplied by surface water imported via the existing ditch systems in east and west Maui is also not known. However, given the project's inland location and its relatively modest supply requirements, it is believed that the long-term viability of the wells proposed herein will be retained.

Attachments

ec: Greg Fukumitsu and Todd Yonamine – TNWRE Inc.

REFERENCES

George A. L. Yuen & Associates. 1990. Water Resources Protection Plan. Consultant Report Prepared for the Commission on Water Resource Management, Department of Land and Natural Resources, State of Hawaii.

Gingerich, S. B. 2008. Ground-Water Availability in the Wailuku Area, Maui, Hawaii. USGS Scientific Investigations Report 2008-5236.

J. A. Engott and T. T. Vana. 2007. Effects of Agricultural Land-Use Changes and Rainfall on Ground-Water Recharge in Central and West Maui, Hawaii, 1926-2004. USGS Scientific Investigations Report 2007-5103.

Johnson, A. G., J. A. Engott, and M. Bassiouni. 2014. Spatially Distributed Groundwater Recharge Estimated Using a Water-Budget Model for the Island of Maui, Hawaii, 1978-2007. USGS Scientific Investigations Report 2014-5168.

Wilson Okamoto Corporation. 2008. Water Resource Protection Plan, June 2008. Consultant Report Prepared for the State of Hawaii Commission on Water Resource Management.

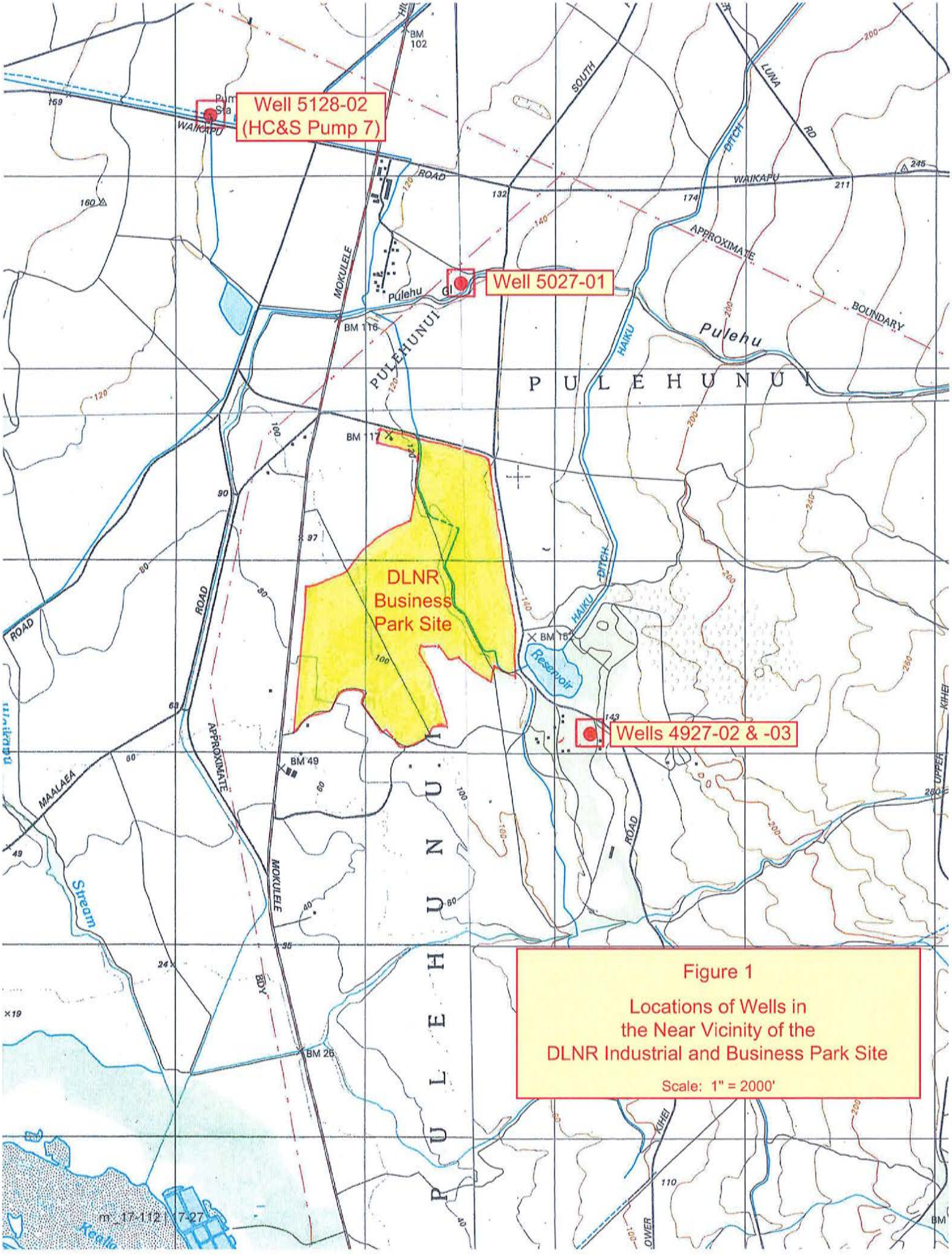

Figure 1

Locations of Wells in
the Near Vicinity of the
DLNR Industrial and Business Park Site

Scale: 1" = 2000'

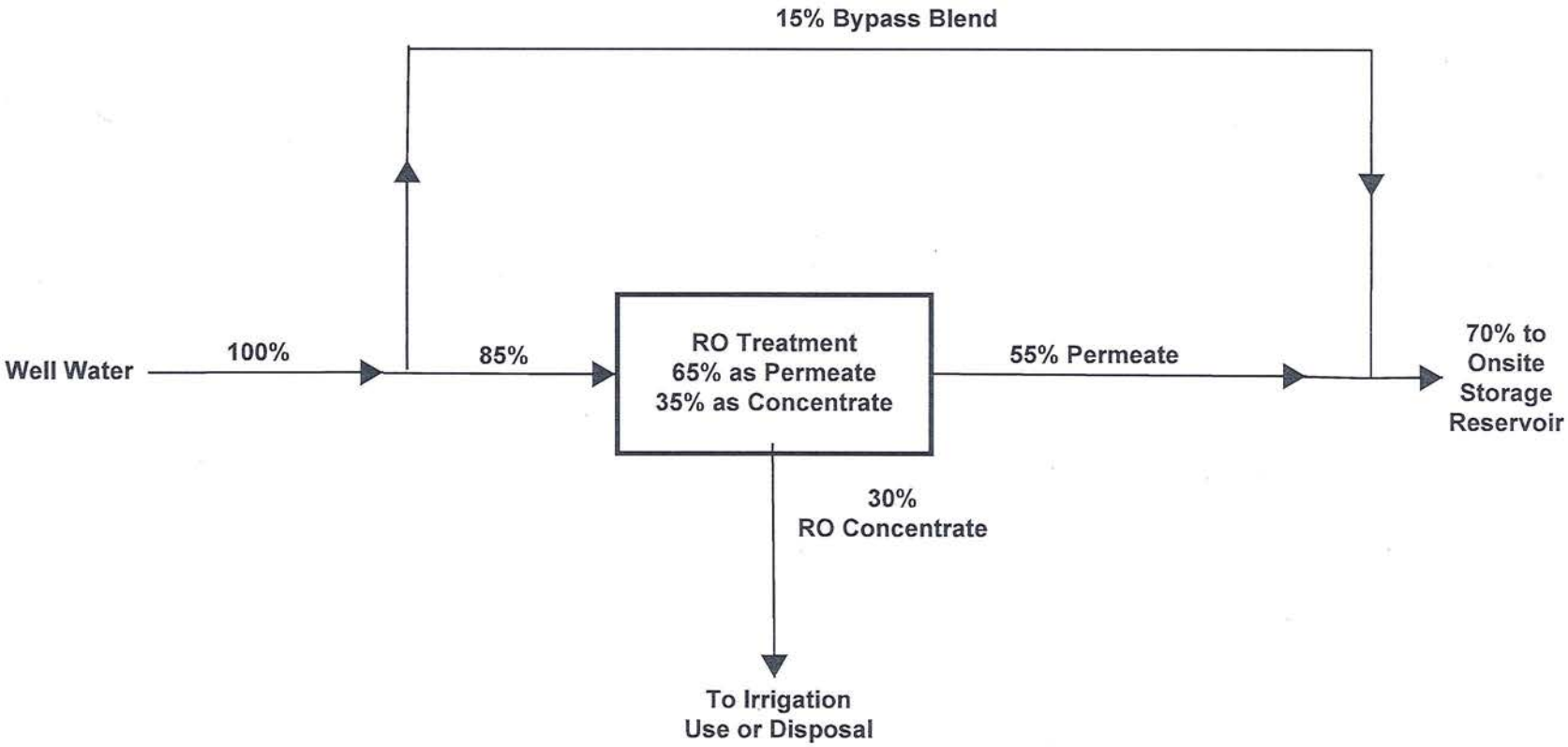

Figure 2

RO Process Schematic

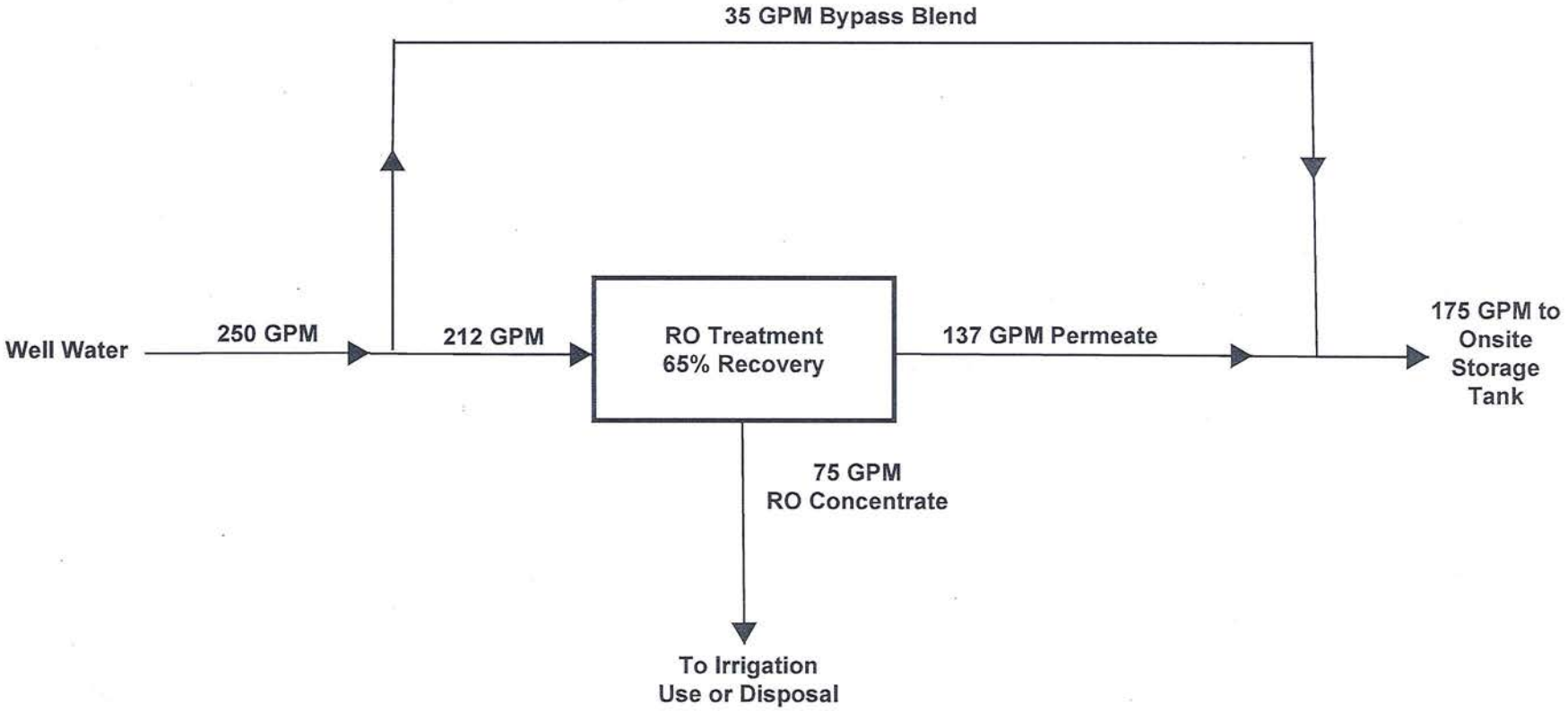

Figure 3

Production by Each 250 GPM Well and RO Treatment Train

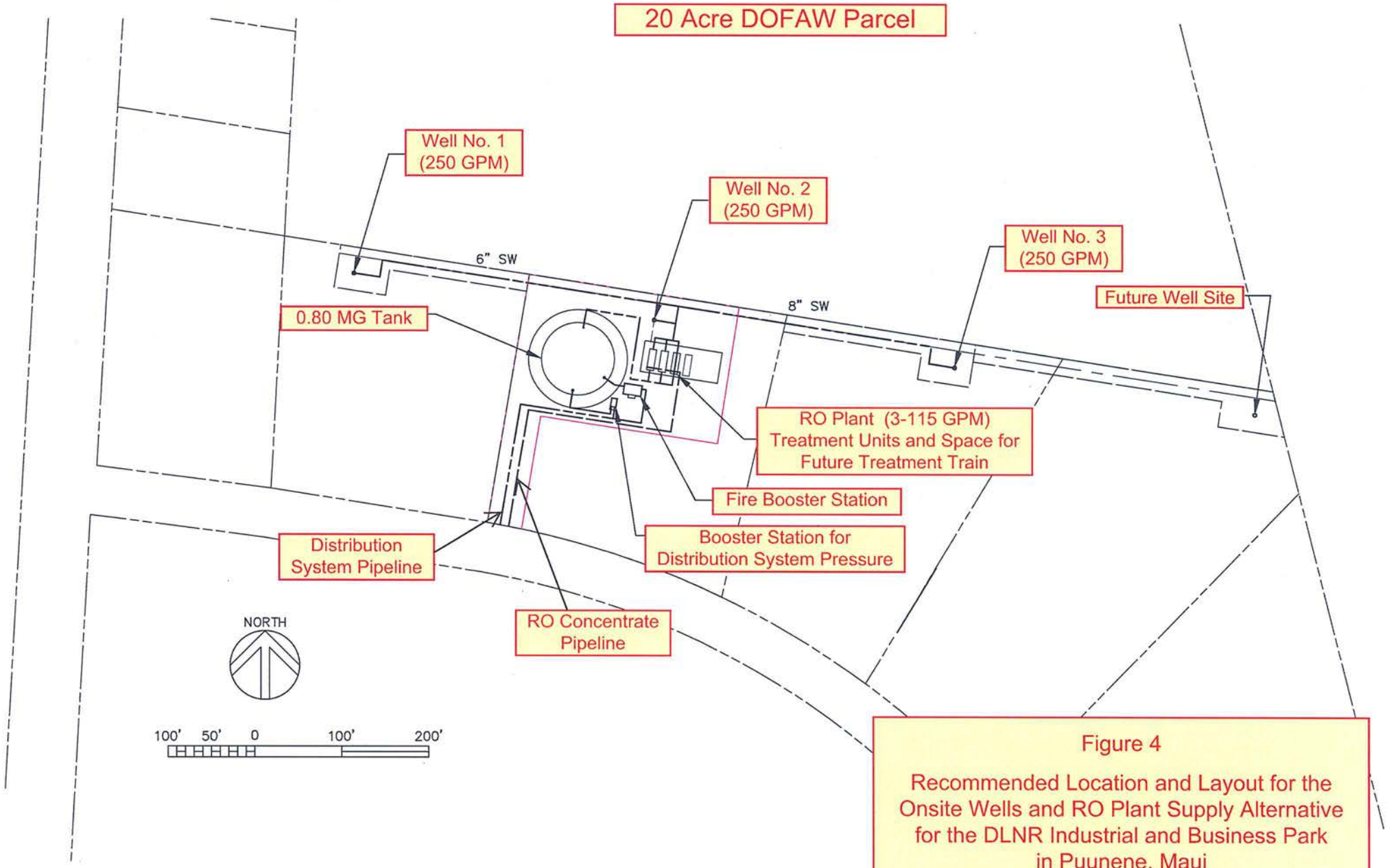

Figure 4

Recommended Location and Layout for the Onsite Wells and RO Plant Supply Alternative for the DLNR Industrial and Business Park in Puunene, Maui

EXHIBIT 1
Cost Estimate for Onsite Wells and
RO Treatment System Supply Alternative

Item Description	Quantity	Unit	Unit Price	Amount	Total
Drill, Case, and Test Well No. 1					
Mobilization		LS		15,000	
Drill 12-Inch Pilot Hole	160	LF	225	36,000	
Video Log Pilot Hole	1	EA	3,500	3,500	
Test Pump Pilot Hole	1	EA	10,000	10,000	
Ream Pilot Hole to 19 Inches	160	LF	200	32,000	
12" Solid Casing	125	LF	110	13,750	
12" Perforated Casing	30	LF	150	4,500	
Furnish & Installing grout	110	LF	65	7,150	
Plumbness and Alignment Test	1	EA	3,000	3,000	
Furnishing & Install Test Pump		LS		12,000	
Development and Test Pumping	60	HRS	250	15,000	
Total					$151,900
Drill, Case, and Test Well No. 2					
Move and Set Up on Well 2 Site		LS		10,000	
Drill 12-Inch Pilot Hole	160	LF	225	36,000	
Video Log Pilot Hole	1	EA	3,500	3,500	
Test Pump Pilot Hole	1	EA	10,000	10,000	
Ream Pilot Hole to 19 Inches	160	LF	200	32,000	
12" Solid Casing	125	LF	110	13,750	
12" Perforated Casing	30	LF	150	4,500	
Furnish & Installing grout	110	LF	65	7,150	
Plumbness and Alignment Test	1	EA	3,000	3,000	
Furnishing & Install Test Pump		LS		12,000	
Development and Test Pumping	60	HRS	250	15,000	
Total					$146,900
Drill, Case, and Test Well No. 3					
Move and Set Up on Well 3 Site		LS		10,000	
Drill 12-Inch Pilot Hole	160	LF	225	36,000	
Video Log Pilot Hole	1	EA	3,500	3,500	
Test Pump Pilot Hole	1	EA	10,000	10,000	
Ream Pilot Hole to 19 Inches	160	LF	200	32,000	
12" Solid Casing	125	LF	110	13,750	
12" Perforated Casing	30	LF	150	4,500	
Furnish & Installing grout	110	LF	65	7,150	
Plumbness and Alignment Test	1	EA	3,000	3,000	
Furnishing & Install Test Pump		LS		12,000	
Development and Test Pumping	60	HRS	250	15,000	
Demobilization		LS		10,000	
Total					$156,900
Well No. 1 Well Outfitting					
Well Site Earthwork	100	CY	40	4,000	
Site AC Paving w/ BC	60	SY	75	4,500	
Access Road Mass Grading	350	LF	125	43,750	
Access Road AC Paving w/BC	130	SY	70	9,100	
Site Fencing	220	LF	60	13,200	
Site Gate	1	EA	3,000	3,000	
Gravel Fill	290	SY	25	7,250	
6" DI Pipe, Class 52	50	LF	120	6,000	
Pipe Valves and Fittings		LS		5,000	

EXHIBIT 1
Cost Estimate for Onsite Wells and
RO Treatment System Supply Alternative

Item Description	Quantity	Unit	Unit Price	Amount	Total
Testing and Chlorination		LS		2,000	
Submersible Pump (250 GPM, 25 HP)	1	EA	80,000	80,000	
Pump Discharge Unit & Piping	1	EA	60,000	60,000	
Erosion and Dust Control		LS		5,000	
Construction Survey		LS		2,000	
Pump Electrical		LS		25,000	
Pump Power and Control Wiring & Ducts	350	LF	75	26,250	
Total					$296,050
Outfit Well No. 3 (Same Cost Well No. 1)					$296,050

EXHIBIT 1
Cost Estimate for Onsite Wells and
RO Treatment System Supply Alternative

Item Description	Quantity	Unit	Unit Price	Amount	Total
Well No. 2 Well Outfitting					
Well Site Earthwork	100	CY	40	4,000	
Gravel Fill	290	SY	25	7,250	
6" DI Pipe, Class 52	50	LF	120	6,000	
Pipe Valves and Fittings		LS		5,000	
Testing and Chlorination		LS		2,000	
Submersible Pump (250 GPM, 25 HP)	1	EA	80,000	80,000	
Pump Discharge Unit & Piping	1	EA	60,000	60,000	
Erosion and Dust Control		LS		5,000	
Construction Survey		LS		2,000	
Pump Electrical		LS		25,000	
Pump Power and Control Wiring & Ducts	50	LF	75	3,750	
Total					$200,000
RO Plant and 0.80 MG Tank					
RO Plant and Tank Site Earthwork	2,000	CY	40	80,000	
Site AC Paving w/ BC	2,500	SY	75	187,500	
Site Fencing	900	LF	50	45,000	
Site Gate	1	EA	3,000	3,000	
Site and Tank Drainage System		LS		80,000	
6" DI Pipe, Class 52	1,050	LF	100	105,000	
8" DI Pipe, Class 52	515	LF	120	61,800	
12" DI Pipe, Class 52	350	LF	130	45,500	
Pipe Valves and Fittings		LS		60,000	
Site Drainage System		LS		75,000	
0.80 MG Steel Tank with Concrete Floor		LS		1,500,000	
Pipe Testing and Chlorination		LS		50,000	
RO Plant Steel Building w/ Concrete Floor		LS		400,000	
RO Plant Mechanical Piping & Setup		LS		80,000	
RO Chlorination System		LS		70,000	
RO Plant Site and Electrical Service		LS		120,000	
RO & MCC System		LS		250,000	
RO Plant Generator		LS		200,000	
Phase RO Plant (3-115 GPM units)	1	EA	400,000	400,000	
Startup Services		LS		50,000	
Domestic Booster Station		LS		160,000	
Fire Booster Station		LS		250,000	
Pipe Testing and Chlorination		LS		60,000	
Erosion and Dust Control		LS		40,000	
Construction Survey		LS		10,000	
MECO Facility Charge for Plant Connection		LS		25,000	
Total					$4,407,800

EXHIBIT 1
Cost Estimate for Onsite Wells and
RO Treatment System Supply Alternative

Item Description	Quantity	Unit	Unit Price	Amount	Total
Drill, Case, and Test Disposal Well No. 1					
Mobilization		LS		12,000	
Drill 12-Inch Pilot Hole	160	LF	225	36,000	
Video Log Pilot Hole	1	EA	3,500	3,500	
Test Pump Pilot Hole	1	EA	10,000	10,000	
Ream Pilot Hole to 19 Inches	160	LF	200	32,000	
12" Solid Casing	140	LF	110	15,400	
12" Perforated Casing	20	LF	150	3,000	
Furnishing & installing grout	110	LF	75	8,250	
Plumbness and Alignment Test	1	EA	3,000	3,000	
Furnishing & Installing Test Pump		LS		5,000	
Development and Test Pumping	8	HRS	250	2,000	
Set up for Disposal Test		LS		5,000	
Dispoal Testing	14	HRS	250	3,500	
Total					$138,650
Drill, Case, and Test Disposal Well No. 2					
Move and Set Up on Disposal Well 2 Site		LS		8,000	
Drill 12-Inch Pilot Hole	160	LF	225	36,000	
Video Log Pilot Hole	1	EA	3,500	3,500	
Test Pump Pilot Hole	1	EA	10,000	10,000	
Ream Pilot Hole to 19 Inches	160	LF	200	32,000	
12" Solid Casing	140	LF	110	15,400	
12" Perforated Casing	20	LF	150	3,000	
Furnishing & installing grout	110	LF	75	8,250	
Plumbness and Alignment Test	1	EA	3,000	3,000	
Furnishing & Installing Test Pump		LS		5,000	
Development and Test Pumping	8	HRS	250	2,000	
Set up for Disposal Test		LS		5,000	
Dispoal Testing	14	HRS	250	3,500	
Demobilization		LS		5,000	
Total					$139,650
Disposal Wells Site Work					
Well Site Earthwork	100	CY	40	4,000	
Site BC paving	270	SY	60	16,200	
Site Fencing	200	LF	60	12,000	
Site Gate	1	EA	3,000	3,000	
6" DI Pipe, Class 52	50	LF	100	5,000	
Pipe Valves and Fittings		LS		10,000	
Injection Well Connection	2	EA	20,000	40,000	
Injection System Meter	1	EA	45,000	45,000	
Total					$135,200
Total for Construction					**$6,069,100**
Engineering Design (8%)					**485,500**
Construction Management (3%)					**182,400**
Contingency (~10%)					**607,000**
Total Cost for Offsite Potable Water System Improvements					**$7,344,000**

APPENDIX E

Wastewater Calculations

CALCULATION OF DLNR INDUSTRIAL AND BUSINESS PARK WASTEWATER FLOWS

Basic Criteria:

Per 3-2-2017 email from MH, lots developed are 70% light industrial, 30% business/commercial.

Light Industrial:	17,424	sf per acre (assumed)		
	1	employee per	500	sf of flooor area
	25	gpd per employee		
Commercial:	17,424	sf per acre (assumed)		
	1	employee per	350	sf of flooor area
	15	gpd per employee		
Dry Weather Infiltration:	5	gpd per capita		
Wet Weather Infiltration:	1250	gpd per acre		

Wastewater Flows															
Total Lot Area (acres)	Light Ind. Area (acres)	Light Ind. Empl.	Comm. Area (acres)	Comm. Empl.	Avg. Ind. Flow (gpd)	Avg. Comm. Flow (gpd)	Total Avg. Flow (gpd)	Total Empl.	Peak Factor	Dry Weather Infil. (gpd)	**Design Avg. Flow (gpd)**	Max. Flow (gpd)	Design Max Flow (gpd)	Wet Weather Infil. (gpd)	Design Peak Flow (gpd)	Design Peak Flow (mgd)
227.0	158.90	5,537	68.10	3390	138,434	50,853	189,287	8,928	**3.23**	44,638	**230,000**	610,000	650,000	280,000	930,000	**0.930**

APPENDIX F

Opinion of Probable Construction Cost

ENGINEER'S OPINION OF PROBABLE COST - SUMMARY
DLNR INDUSTRIAL AND BUSINESS PARK

Date: 12/05/18
By: Austin, Tsutsumi & Associates, Inc.

Item No.	Item Description		Total Price
BASE COST - ALL ALTERNATIVES			
1	BMP	$	4,000,000
2	Roadway	$	10,100,000
3	Grading and Drainage	$	13,000,000
	SUB-TOTAL - BASE COST	$	27,100,000
	15% CONTINGENCY	$	4,100,000
	SUB-TOTAL - BASE COST W/ CONTINGENCY	**$**	**31,200,000**
WATER ALTERNATIVE 1 - DWS WATER SYSTEM			
4	On-Site Water System	$	5,000,000
5	Off-Site Water System	$	7,600,000
	SUB-TOTAL FOR ALTERNATIVE 1	$	12,600,000
	15% CONTINGENCY	$	1,900,000
	SUB-TOTAL - WATER ALTERNATIVE 1 W/ CONTINGENCY	**$**	**14,500,000**
WATER ALTERNATIVE 2 - BRACKISH R0 WATER SYSTEM			
6	Water Distribution System - Alt 2	$	10,700,000
7	RO Brackish Water Treatment Facility	$	7,400,000
	SUB-TOTAL FOR ALTERNATIVE 2	$	18,100,000
	15% CONTINGENCY	$	2,700,000
	SUB-TOTAL - WATER ALTERNATIVE 2 W/ CONTINGENCY	**$**	**20,800,000**
WATER ALTERNATIVE 3 - SURFACE WATER SYSTEM			
8	Water Distribution System - Alt 3	$	10,500,000
9	Surface Water Treatment Facility	$	15,000,000
	SUB-TOTAL FOR ALTERNATIVE 3	$	25,500,000
	15% CONTINGENCY	$	3,800,000
	SUB-TOTAL - WATER ALTERNATIVE 3 W/ CONTINGENCY	**$**	**29,300,000**
WASTEWATER ALTERNATIVE 2A			
10	Wastewater System - Alt 2A	$	12,000,000
	SUB-TOTAL FOR ALTERNATIVE 2A	$	12,000,000
	15% CONTINGENCY	$	1,800,000
	SUB-TOTAL - WASTEWATER ALT 2A W/ CONTINGENCY	**$**	**13,800,000**
WASTEWATER ALTERNATIVE 2B			
11	Wastewater System - Alt 2B	$	13,200,000
	SUB-TOTAL FOR ALTERNATIVE 2B	$	13,200,000
	15% CONTINGENCY	$	2,000,000
	SUB-TOTAL - WASTEWATER ALT 2B W/ CONTINGENCY	**$**	**15,200,000**

Item No.	Item Description		Total Price
WASTEWATER ALTERNATIVE 3			
12	Wastewater Collection System	$	8,600,000
13	Wastewater Reclamation Facilty	$	14,100,000
	SUB-TOTAL FOR ALTERNATIVE 3	$	22,700,000
	15% CONTINGENCY	$	3,400,000
	SUB-TOTAL - WASTEWATER ALT 3 W/ CONTINGENCY	**$**	**26,100,000**
WASTEWATER ALTERNATIVE 4			
16	Wastewater Collection System	$	19,200,000
17	Wastewater Reclamation Facilty	$	7,400,000
	SUB-TOTAL FOR ALTERNATIVE 4	$	26,600,000
	15% CONTINGENCY	$	4,000,000
	SUB-TOTAL - WASTEWATER ALT 4W/ CONTINGENCY	**$**	**30,600,000**

DISCLAIMER

In providing preliminary construction costs, Client understands that Austin, Tsutsumi & Associates, Inc. (ATA) has no control over costs or the price of labor, equipment or materials, or over the Contractor's method of pricing and that the preliminary construction costs provided herein are made on the basis of ATA's qualifications and experience. ATA makes no warranty, expressed or implied, as to the accuracy of such opinion as compared to bid or actual costs.

Note: Quantities provided for this estimate are order of magnitude estimates only, since no design or grading has been completed at this time. Actual quantities will be determined during the design phase when grading has been completed. Earthwork quantities order of magnitude estimates do not include individual lot grading.

ENGINEER'S OPINION OF PROBABLE COST - ROADWAY & DRAINAGE
DLNR INDUSTRIAL AND BUSINESS PARK

Date: 10/13/17
By: Austin, Tsutsumi & Associates, Inc.

Item No.	Item Description	Est. Qty.	Unit	Unit Price	Total Price
	EARTHWORK AND EROSION CONTROL				
1	Mobilization/Demobilization	1	LS	$ 200,000	$ 200,000
2	Clear & Grub	100	AC	$ 20,500	$ 2,050,000
3	Hydroseed for Clear & Grub	40	AC	$ 13,000	$ 520,000
4	Construction Water	1	LS	$ 1,000,000	$ 1,000,000
5	Silt Fence	2,600	LF	$ 15	$ 39,000
6	Dust Fence	2,600	LF	$ 60	$ 156,000
	SUBTOTAL FOR EARTHWORK AND EROSION CONTROL				**$ 4,000,000**
	ROADWAY WORK				
7	4" Asphalt Concrete	64,000	SY	$ 50	$ 3,200,000
8	6" Aggregate Base Course	64,000	SY	$ 30	$ 1,920,000
9	9" Select Borrow	64,000	SY	$ 20	$ 1,280,000
10	Concrete Curb	28,800	LF	$ 30	$ 864,000
11	Concrete Curb and Gutter	28,800	LF	$ 40	$ 1,152,000
12	4" Sidewalk, Including Aggregate Base	172,800	SF	$ 10	$ 1,728,000
	SUBTOTAL FOR ROADWAY WORK				**$ 10,100,000**
	DRAINAGE SYSTEM AND EARTH WORK				
13	Excavation (roadways/detention basins only)	160,000	CY	$ 14	$ 2,240,000
14	Embankment (roadways/detention basins only)	85,000	CY	$ 7	$ 595,000
15	24" HDPE	3,600	LF	$ 185	$ 666,000
16	36" HDPE	8,000	LF	$ 315	$ 2,520,000
17	42" HDPE	2,500	LF	$ 325	$ 812,500
18	48" HDPE	2,500	LF	$ 335	$ 837,500
19	54" HDPE	2,100	LF	$ 370	$ 777,000
20	60" HDPE	1,000	LF	$ 400	$ 400,000
21	County Std. Conc Drain Manhole, 4'x4'	40	EA	$ 9,200	$ 368,000
22	HDOT Type "C" Conc DMH	12	EA	$ 15,000	$ 180,000
23	Custom Large DMH	20	EA	$ 20,000	$ 400,000
24	Catch Basin Type "A"	100	EA	$ 15,000	$ 1,500,000
25	Concrete Headwall for Culvert and Basins	15	EA	$ 15,000	$ 225,000
26	Rip-Rap Lined Overflow Spillway	18	EA	$ 20,000	$ 360,000
27	4' High Chain Link Fence for Detention Basins	15,500	LF	$ 75	$ 1,162,500
	SUBTOTAL FOR DRAINAGE SYSTEM				**$ 13,000,000**
	TOTAL - EARTHWORK, EROSION, ROADWAY AND DRAINAGE				**$ 27,100,000**

DISCLAIMER

In providing preliminary construction costs, Client understands that Austin, Tsutsumi & Associates, Inc. (ATA) has no control over costs or the price of labor, equipment or materials, or over the Contractor's method of pricing and that the preliminary construction costs provided herein are made on the basis of ATA's qualifications and experience. ATA makes no warranty, expressed or implied, as to the accuracy of such opinion as compared to bid or actual costs.

Note: Quantities provided for this estimate are order of magnitude estimates only, since no design or grading has been completed at this time. Actual quantities will be determined during the design phase when grading has been completed. Earthwork quantities order of magnitude estimates do not include individual lot grading.

Item No.	*Item Description*	*Est. Qty.*	*Unit*	*Unit Price*	*Total Price*
	ON-SITE WATER SYSTEM - ALTERNATIVE 1				
1-1	12" D.I. Waterline, Class 52 w/ Polywrap	15,500	LF	$ 300	$ 4,650,000
1-2	Fire Hydrant Assembly w/ Conc. Slab	54	EA	$ 7,000	$ 378,000
1-3	Connection to DWS Waterline	1	EA	$ 15,000	$ 15,000
	SUBTOTAL FOR ON-SITE WATER SYSTEM - ALTERNATIVE 1				**$ 5,000,000**
	OFF-SITE WATER SYSTEM - ALTERNATIVE 1				
1-4	Well Drilling	1	EA		$ 1,200,000
1-5	Well Development (1200 gpm well)	1	EA		$ 3,000,000
1-6	12" Transmission line from well to 0.5 MG Kupaa Tank	1,000	LF	$ 300	$ 300,000
1-7	1.0 MG Concrete Reservoir at Waihee Tank, including site work		LS		$ 3,000,000
1-8	Connection to 36" CMWTS at Waihee Tank		LS		$ 50,000
1-9	Connection to 36" CMWTS at project site		LS		$ 50,000
	SUBTOTAL FOR OFF-SITE WATER SYSTEM - ALTERNATIVE 1				**$ 7,600,000**
	TOTAL FOR WATER SYSTEM - ALTERNATIVE 1				**$ 12,600,000**

NOTE: DOES NOT INCLUDE COST FOR WATER DISTRIBUTION SYSTEM FOR INTERIOR ROADS NOT SHOWN ON CONCEPTUAL COMMUNITY MASTER PLAN, OR WATER LATERALS AND METERS FOR INDIVIDUAL LOTS.

Appendix F
DLNR Industrial and Business Park

Item No.	*Item Description*	*Est. Qty.*	*Unit*	*Unit Price*	*Total Price*
	WATER SYSTEM - ALTERNATIVE 2				
2-1	4" PVC RO Concentrate Line	10,100	LF	$ 125	$ 1,262,500
2-2	8" D.I. Waterline, Class 52 w/ Polywrap	15,800	LF	$ 275	$ 4,345,000
2-3	12" D.I. Fireline, Class 52 w/ Polywrap	15,800	LF	$ 300	$ 4,740,000
2-4	Fire Hydrant Assembly w/ Conc. Slab	54	EA	$ 7,000	$ 378,000
	SUBTOTAL FOR WATER SYSTEM - ALTERNATIVE 2				**$ 10,700,000**
2-5	**RO Brackish Water WTF[1]**		LS		**$ 7,400,000**
	TOTAL FOR WATER SYSTEM - ALTERNATIVE 2				**$ 18,100,000**
1 Refer to Appendix D for TNWRE Cost Estimate					
NOTE: DOES NOT INCLUDE COST FOR WATER DISTRIBUTION SYSTEM FOR INTERIOR ROADS NOT SHOWN ON CONCEPTUAL COMMUNITY MASTER PLAN, OR WATER LATERALS AND METERS FOR INDIVIDUAL LOTS.					

Item No.	*Item Description*	*Est. Qty.*	*Unit*	*Unit Price*	*Total Price*
	WATER SYSTEM - ALTERNATIVE 3				
	Distribution System				
3-1	8" PVC C900 Raw Waterline	4,300	LF	$ 250	$ 1,075,000
3-2	8" D.I. Waterline, Class 52 w/ Polywrap	15,800	LF	$ 275	$ 4,345,000
3-3	12" D.I. Fireline, Class 52 w/ Polywrap	15,800	LF	$ 300	$ 4,740,000
3-4	Fire Hydrant Assembly w/ Conc. Slab	54	EA	$ 7,000	$ 378,000
				SUBTOTAL - Distribution System	**$ 10,500,000**
	Surface Water Treatment Facility				
3-5	Ditch Intake		LS		$ 1,200,000
3-6	Raw Water Storage Reservoir		LS		$ 3,000,000
3-7	Site Work		LS		$ 1,800,000
3-8	WTP Piping		LS		$ 1,900,000
3-9	WTP Building		LS		$ 3,200,000
3-10	Storage Reservoir/Chlorine contact tank		LS		$ 900,000
3-11	Sludge Lagoons		LS		$ 900,000
3-12	Electrical Work		LS		$ 700,000
3-13	SCADA System		LS		$ 400,000
3-14	Membrane Equipment		LS		$ 800,000
3-15	Landscaping		LS		$ 100,000
3-16	Commissioning		LS		$ 100,000
				SUBTOTAL - Water Treatment Facility	**$ 15,000,000**
				TOTAL (SURFACE WATER TREATMENT FACILITY - ALTERNATIVE 3)	**$ 25,500,000**

NOTE: DOES NOT INCLUDE COST FOR WATER DISTRIBUTION SYSTEM FOR INTERIOR ROADS NOT SHOWN ON CONCEPTUAL COMMUNITY MASTER PLAN, OR WATER LATERALS AND METERS FOR INDIVIDUAL LOTS.

Item No.	Item Description	Est. Qty.	Unit	Unit Price	Total Price
	WASTEWATER SYSTEM ALTERNATIVE 2A				
4-1	12" PVC Sewer Pipe	4,200	LF	$ 250	$ 1,050,000
4-2	8" PVC Sewer Pipe	9,700	LF	$ 210	$ 2,037,000
4-3	Sewer Manhole	40	EA	$ 10,000	$ 397,143
4-4	Wastewater Pump Station		LS		$ 3,800,000
4-5	8" PVC C900 Sewer Force Main	15,800	LF	$ 300	$ 4,740,000
	SUBTOTAL FOR WASTEWATER SYSTEM - ALTERNATIVE 2A				**$ 12,000,000**

Item No.	Item Description	Est. Qty.	Unit	Unit Price	Total Price
	WASTEWATER SYSTEM ALTERNATIVE 2B				
4-1	12" PVC Sewer Pipe	4,200	LF	$ 250	$ 1,050,000
4-2	8" PVC Sewer Pipe	9,700	LF	$ 210	$ 2,037,000
4-3	Sewer Manhole	40	EA	$ 10,000	$ 397,143
4-4	Wastewater Pump Station		LS		$ 3,800,000
4-5	8" PVC C900 Sewer Force Main	19,800	LF	$ 300	$ 5,940,000
	SUBTOTAL FOR WASTEWATER SYSTEM - ALTERNATIVE 2B				**$ 13,200,000**

NOTE: DOES NOT INCLUDE COST FOR WASTEWATER COLLECTION SYSTEM FOR INTERIOR ROADS NOT SHOWN ON CONCEPTUAL COMMUNITY MASTER PLAN, OR SEWER LATERALS.

Item No.	Item Description	Est. Qty.	Unit	Unit Price	Total Price
	WASTEWATER SYSTEM ALTERNATIVE 3				
	WASTEWATER COLLECTION/IRRIGATION SYSTEM ALTERNATIVE 3				
5-1	12" PVC Sewer Pipe	4,200	LF	$ 250	$ 1,050,000
5-2	8" PVC Sewer Pipe	9,700	LF	$ 210	$ 2,037,000
5-3	8" PVC C900 Sewer Force Main	2,115	LF	$ 250	$ 528,750
5-4	8" PVC C900 R-1 Irrigation Pipe*	10,300	LF	$ 250	$ 2,575,000
5-5	Sewer Manhole	40	EA	$ 10,000	$ 397,143
5-6	Wastewater Pump Station		LS		$ 2,000,000
	SUBTOTAL FOR WASTEWATER COLLECTION SYSTEM - ALTERNATIVE 3				**$ 8,600,000**
	275,000 GPD WASTEWATER RECLAMATION FACILITY (WWRF) - ALTERNATIVE 3				
5-7	Mobilization		LS		$ 50,000
5-8	Clearing and Grubbing	3	ACRE	$ 10,000	$ 30,000
5-9	Mass Excavation		LS		$ 50,000
5-10	4" Gravel Fill		LS		$ 10,000
5-11	6' High (16' Wide) Double Swing Chainlink Gate	1	EA	$ 3,000	$ 3,000
5-12	6' High Chainlink Fence	1,500	LF	$ 80	$ 120,000
5-13	Site A.C. Paving		LS		$ 40,000
5-14	Site and Tank Drainage System		LS		$ 40,000
5-15	R-1 Water and Non-Compliant Water, 275,000 Gal. Tank	2	EA	$ 400,000	$ 800,000
5-16	8" PVC C900 R-1 Pipe	400	LF	$ 250	$ 100,000
5-17	4" PVC C900 Non-Compliant R-1 Pipe	600	LF	$ 90	$ 54,000
5-18	Non-Compliant Water Pump System (2 Pumps)		LS		$ 150,000
5-19	R-1 Water Pump System (3 Pumps)		LS		$ 250,000
5-20	Wastewater Treatment System		LS		$ 11,000,000
5-21	Electrical Work		LS		$ 1,000,000
	SUBTOTAL FOR WWRF, EXCLUDING BACKUP SOIL AQUIFER TREATMENT SYSTEM				**$ 13,700,000**
	SOIL AQUIFER TREATMENT SYSTEM				
5-22	Mobilization		LS		$ 50,000
5-23	Clearing and Grubbing	4	ACRE	$ 10,000	$ 40,000
5-24	Excavation	6,000	CY	$ 25	$ 150,000
5-25	Embankment	300	CY	$ 6	$ 1,800
5-26	6' High (14' Wide) Double Swing Chainlink Gate	1	EA	$ 3,000	$ 3,000
5-27	6' High Chainlink Fence	1,600	LF	$ 40	$ 64,000

Item No.	*Item Description*	*Est. Qty.*	*Unit*	*Unit Price*	*Total Price*
5-28	12' Wide x 6" Thick Gravel Perimeter Roadway (2,000 LF)	2,050	SY	$ 65	$ 133,250
				SUBTOTAL SOIL AQUIFER SYSTEM	**$ 440,000**
				SUBTOTAL (275,000 GPD WWRF, INCLUDING SOIL AQUIFER SYSTEM)	**$ 14,100,000**
				TOTAL FOR WASTEWATER SYSTEM - ALTERNATIVE 3	**$ 22,700,000**

* INCLUDES R-1 WATERLINE WITHIN PROJECT AREA ONLY. DOES NOT INCLUDE COST OF WATERLINES TO OFF-SITE REUSE AREA OR COST OF REUSE IRRIGATION SYSTEM.

NOTE: DOES NOT INCLUDE COST FOR WASTEWATER COLLECTION SYSTEM FOR INTERIOR ROADS NOT SHOWN ON CONCEPTUAL COMMUNITY MASTER PLAN, OR SEWER LATERALS.

Item No.	Item Description	Est. Qty.	Unit	Unit Price	Total Price
	WASTEWATER SYSTEM ALTERNATIVE 4				
	WASTEWATER COLLECTION SYSTEM				
6-1	12" PVC Sewer Pipe	5,700	LF	$ 250	$ 1,425,000
6-2	8" PVC Sewer Pipe	9,700	LF	$ 210	$ 2,037,000
6-3	Sewer Manhole	44	EA	$ 10,000	$ 440,000
6-4	On-site Wastewater Pump Station		LS		$ 3,800,000
6-5	8" PVC C900 Sewer Force Main to Midway WWPS	14,800	LF	$ 300	$ 4,440,000
6-6	Midway Wastewater Pump Station		LS		$ 3,800,000
6-7	8" PVC C900 Sewer Force Main from Midway WWPS to County WWRF	10,900	LF	$ 300	$ 3,270,000
	SUBTOTAL FOR WASTEWATER COLLECTION SYSTEM - ALTERNATIVE 4				**$ 19,200,000**
	WASTEWATER RECLAMATION FACILITY				
6-8	Temporary Wastewater Treatment Facility		LS		$ 4,800,000
6-9	Pro-rata Share of County WWRF*		LS		$ 2,600,000
	SUBTOTAL FOR WASTEWATER TREATMENT SYSTEM - ALTERNATIVE 4				**$ 7,400,000**
	TOTAL FOR WASTEWATER SYSTEM - ALTERNATIVE 4				**$ 26,600,000**

NOTE: DOES NOT INCLUDE COST FOR WASTEWATER COLLECTION SYSTEM FOR INTERIOR ROADS NOT SHOWN ON CONCEPTUAL COMMUNITY MASTER PLAN, OR SEWER LATERALS.

* Per Wastewater Alternative 4 in DHHL's Regional Study, Pro-Rata Share of County WWRF would be $8,300,000. Based on DLNR portion of flows being 31%, the cost for DLNR's pro-rata share is assumed to be 31%, or about $2,600,000.

APPENDIX D

PHASE 1 ENVIRONMENTAL SITE ASSESSMENT

PHASE I
ENVIRONMENTAL SITE ASSESSMENT

DLNR Leased Lands
Portions of HC&S Fields 411, 501, 502, 509, 604,
819, 911, 914, 915, and 916
TMK Numbers (2) 2-5-1: Parcel 10; (2) 3-8-1: Parcel 46;
(2) 3-8-3: Parcel 22; (2) 3-8-8: Parcels 1 (portion), 20, and 38
Maui, Hawaii

Prepared For:
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Through its division
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ETC Project No. 16-1018

March 2017

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1.0 EXECUTIVE SUMMARY

This report presents the results of a Phase I Environmental Site Assessment (ESA) performed by EnviroServices & Training Center, LLC (ETC) in conformance with the scope and limitations of the American Society for Testing and Materials (ASTM) Practice E1527-13. This Phase I ESA was completed for Alexander & Baldwin, LLC through its division Hawaiian Commercial & Sugar Company (Client) for the State of Hawaii, Department of Land and Natural Resources (DLNR) lease lands, identified as Tax Map Key (TMK) identification numbers (2) 2-5-1: Parcel 10, (2) 3-8-1: Parcel 46, (2) 3-8-3: Parcel 22, (2) 3-8-8: Parcels 1 (portion), 20, and 38. The land parcels correspond to portions of HC&S Fields 411, 501, 502, 509, 604, 819, 911, 914, 915, and 916 located in Maui, Hawaii, herein referred to as the Subject Property. Review of tax records indicated that the Subject Property parcels are currently owned by the State of Hawaii.

The Subject Property consists of six non-contiguous land parcels. Specifically, the Subject Property consists of a 0.2-acre land parcel 10 (Field 411), 6.2-acre land parcel 46 (Fields 604, 509, and 501), 1.1-acre land parcel 22 (Fields 501 and 502), 398-acre land parcel 1, excluding areas occupied by the Hawaii Department of Agriculture and the Hawaii Department of Defense (approximate 353 acres within Fields 911 and 914), 18-acre land parcel 20 (Field 819), and 293-acre land parcel 38 (Fields 915 and 916). The Subject Property primarily consists of former sugarcane fields. In addition, Parcels 1, 20, and 38 consists of approximately eight (8) concrete structures; Parcel 10 consists of a capped well; and Parcels 22 and 46 consists of remnant roadways within former sugarcane fields. All subject parcels are currently occupied by HC&S under Revocable Permits from DLNR for sugarcane cultivation (Permit Numbers S-7368, S-7503, S-7506, and S-7582).

Visual observation for the use and/or storage of hazardous materials and hazardous waste was performed on October 24, 2016. Stockpiles of concrete, rock, asphalt, and scrap metal were observed on the Subject Property. While no petroleum products or hazardous substances were observed from the visible surface areas of these piles; the interior areas of the piles was not visible. The quantity and size of these piles made it infeasible to adequately and fully characterize their potential environmental impact. As such, the unknown contents of these piles are considered a data gap. Based on interview findings the piles are suspected to contain demolition materials from the former NAS Puunene. While the exact contents of these piles are unknown, site reconnaissance findings and information provided by HC&S do not indicate the presence of significant quantities of hazardous substances or petroleum projects. Based on these findings, this data gap is not considered significant.

The Subject Property was identified as a LUST, UST, FUDS, FINDS, and ECHO site by the contracted database. The FINDS and ECHO listings were associated with the *Puunene Armory* site, which is not included as part of the Subject Property. The Subject Property is located on a portion of the *Former Puunene Navy Airport*, which is identified as a LUST/UST facility. ETC requested and reviewed the *Former Puunene Navy Airport (Facility ID 9-503623)* LUST facility file at the DOH SHWB. File review indicated that a total of nine (9) USTs were closed in 2000. All nine (9) USTs were reportedly situated on the former NAS Puunene. The nine (9) USTs consisted of three (3) sites, Site 1 consisted of three (3) 50,000-gallon aviation fuel USTs, Site 2 consisted of four (4) 25,000-gallon aviation fuel USTs, and Site 3 consisted of two (2) 50,000-gallon aviation fuel USTs. The *Final Underground Storage Tank Closure Report,*

dated July 2, 2001, prepared by Environmental Chemical Corporation (ECC) indicated that Site 1 was located along Kamaaina Road on the north portion of Parcel 1; and Site 2 and Site 3 were located within the south portion of Parcel 35 which is located west of the Subject Property across Mokulele Highway. However, correspondence and historical facility maps provided by HC&S indicated that both Site 2 and Site 3 were incorrectly mapped in ECC's report. Specifically, Site 2 was located on the southwest portion of Parcel 1 and Site 3 was located on the northwest portion of Parcel 38. Site 1 was situated on the area of Parcel 1 known as the Department of Agriculture cattle staging area, which is excluded from the Subject Property. In addition, Site 2 was situated on a portion of Parcel 1 referred to as the 'armory' (i.e. Army National Guard Armory), which is reportedly excluded from the Subject Property. Site 3 was the only known UST site located on the Subject Property and was situated near the northwest border of Parcel 38. Note that no documentation of a correction to DOH's UST facility file regarding the former UST locations was found during ETC's file review. Review indicated that a release at Site 1 and 2 (DOH Release ID 000079) was observed and reported to the DOH during UST closure activities in 2000. Subsequent release response activities were completed including the over excavation and onsite aeration of approximately 15-cubic yards of petroleum contaminated soils. Following aeration and confirmation sampling, the soils were utilized as excavation backfill at the facility. Note that no over excavation of Site 3 was performed. The DOH subsequently issued the facility a letter dated May 1, 2001 indicating that 'no further action' was required in response to the release. Based on these findings, the UST release associated with the *Former Puunene Navy Airport* facility is not considered an REC for the Subject Property.

File review of the *Maui Airport Military Reservation* at the DOH HEER Office indicated a transformer release site and a former landfill were located on the NAS Puunene. Review indicated that the transformer release site and former landfill are located on Parcel 1 portion of the Subject Property. The transformer release site was cleaned up and included the removal and disposal of approximately 633-cubic yards of PCB-contaminated soil and concrete debris. The release site was subsequently backfilled and restored. As a result, the DOH HEER Office issued the facility a letter indicating that no further action (i.e. No Department of Defense Action Indicated) was required for the site. ETC's site reconnaissance of this area indicated no evidence of a release. Based on these findings, the transformer release site is not considered an REC for the Subject Property.

File review and interview findings indicated that the *Maui Airport Landfill* reportedly consisted of a 20-acre dump site located on Parcel 38 and was believed to contain the remains of aircraft and other equipment that were deemed surplus for military purposes. An archaeological monitoring report prepared by Pacific Legacy, Inc., dated 2008 indicated that in 1996, the Maui Military Museum conducted excavations of the *Maui Airport Landfill*. Although the findings were not formally documented in a written report, the excavations revealed exposed military debris and NAS Puunene equipment. A subsequent environmental investigation was conducted on the former *Maui Airport Landfill* site which included soil and groundwater sampling and analyses. Investigative results indicated that elevated concentrations of arsenic, cadmium, lead, and PCBs were found in the soil. In addition, chloromethane was found in the groundwater located on the *Maui Airport Landfill*. A Remedial Investigation / Feasibility Study (RI-FS) determined that surface capping with institutional controls and natural attenuation with institutional controls were determined to be two highest ranking remedial alternatives. Telephone correspondence with Mr. Steven Mow of the DOH HEER Office revealed that there was no additional documentation with regards to the status of the *Maui Airport Landfill*. However, Mr.

Mow indicated that he believed the *Maui Airport Landfill* was a 'closed' site. Mr. Mow also indicated that Mr. Derek Yasaka of Wil Chee-Planning, Inc. (WCP) may have additional information regarding the status of the landfill. WCP reportedly conducted the environmental investigations related to the *Maui Airport Landfill*. Telephone correspondence with Mr. Derek Yasaka indicated that the RI-FS was completed and it was determined that the recommended action by the Navy was 'no action.' Mr. Yasaka indicated that the 'no action' decision was made in or around April 2014, at which point WCP's involvement with the site was terminated. Mr. Yasaka speculated that no additional actions have taken place at the *Maui Airport Landfill*. Site reconnaissance and interview findings confirmed that the *Maui Airport Landfill* site is present on the Subject Property. Based on ETC's file review, site reconnaissance, and interview findings, the *Maui Airport Landfill* is considered an REC for the Subject Property.

In addition to the Subject Property findings, the contracted database search identified one (1) LUST site and seven (7) Orphan sites within the specified radii. Based on these findings, ETC requested and reviewed select facility files from the Hawaii Department of Health. Database and file review findings indicated that none of these facilities were considered a REC for the Subject Property.

Interview findings indicate that pre-harvest burning of sugarcane has been conducted on the Subject Property as part of the sugarcane cultivation operations. Note that the primary concern regarding sugarcane burning is the airborne particulate matter. As such, the former sugarcane burning is not considered to be a REC for the Subject Property.

The Subject Property has been used for commercial sugarcane cultivation since at least 1910. Activities commonly associated with commercial sugar cultivation include the use and application of pesticides. As described in Section 9 of the DOH HEER Office's November 2009 *Interim Final Technical Guidance Manual for the Implementation of the Hawaii State Contingency Plan* (HEER TGM), with the exception of arsenic, residual pesticides in former sugarcane fields are rarely detected above levels of potential concern. In addition, data gathered by the DOH over the past ten years indicate that dioxins in former sugarcane fields do not pose a significant health risk (DOH, 2009). Review of the DOH HEER Office's *Summary of Pesticide and Dioxin Contamination Associated with Former Sugarcane Operations* indicated that elevated concentrations were not reported in the surface soils of sugarcane field(s) associated with the nearby Puunene Sugar Mill (DOH, 2011). No pesticide mixing sites are known to have been operated on the Subject Property. Although other contaminants associated with commercial sugarcane cultivation were not evaluated, based on these findings, the former agricultural usage of the Subject Property is considered a *de minimis* condition.

In summary, ETC performed a Phase I ESA in conformance with the scope and limitations of ASTM Practice E1527-13 on the Subject Property. This assessment has revealed no evidence of RECs in connection with the Subject Property except for the following:

- The existing former *Maui Airport Landfill* site which is situated on a approximate 20-acre portion of Parcel 38; and the associated buried materials and contaminants to the soil and groundwater at the former *Maui Airport Landfill* are considered an REC.

2.0 INTRODUCTION

EnviroServices & Training Center, LLC (ETC) was contracted by Alexander & Baldwin, Inc. through its division Hawaiian Commercial & Sugar Company (Client) to complete a Phase I Environmental Site Assessment (ESA) for the DLNR Lease Lands, identified as Tax Map Key (TMK) identification numbers (2) 2-5-1: Parcel 10, (2) 3-8-1: Parcel 46, (2) 3-8-3: Parcel 22, (2) 3-8-8: Parcels 1 (portion), 20, and 38. The property corresponds to portions of HC&S Field Nos. 411, 501, 502, 509, 604, 819, 911, 914, 915, and 916 located in Maui, Hawaii, herein referred to as the Subject Property.

This Phase I ESA was performed in accordance with the ASTM International Standard E1527-13 entitled *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (referred to herein as the ASTM Practice). The ASTM Practice is intended for use by parties who wish to assess the environmental condition of commercial real estate with respect to contaminants within the scope of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and petroleum products. As such, the ASTM Practice was designed to satisfy "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice" as defined in 42 United States Code (U.S.C.) §9601(35)(B).

2.1 Background

Under CERCLA, persons may be held liable for cleaning up hazardous substances at properties that they either currently own or operate, or owned or operated at the time of disposal. Strict liability in the context of CERCLA means that a potentially responsible party may be liable for environmental contamination based solely on property ownership and without regard to fault or negligence.

In 1986, the Superfund Amendments and Reauthorization Act (SARA) amended CERCLA by creating an "innocent landowner" defense to CERCLA liability for those persons who could successfully demonstrate, among other requirements, that they "did not know and had no reason to know" prior to purchasing the property that any hazardous substance that is the subject of a release or threatened release was disposed of on, in, or at the property. Such persons, to demonstrate that they had "no reason to know" must have undertaken, prior to, or on the date of acquisition of the property, "all appropriate inquiries" into the previous ownership and uses of the property consistent with good commercial or customary standards and practices.

The Small Business Liability Relief and Brownfields Revitalization Act (referred to as "the Brownfields Amendments") was enacted in January 2002 to amend CERCLA. These amendments included providing funds to assess and clean up brownfields sites, clarifying CERCLA liability provisions for certain landowners, and providing funding to enhance state and tribal cleanup programs.

Subtitle B of Title II of the Brownfields Amendments revised CERCLA, clarifying the requirements necessary to establish the innocent landowner defense. The Brownfields Amendments also added protections from CERCLA liability for "bona fide prospective purchasers" and "contiguous property owners" who meet certain statutory requirements. Each of the CERCLA liability provisions for innocent landowners, bona fide prospective purchasers, and contiguous property owners (referred to collectively as "landowner liability protections," or LLPs) requires that, among other requirements, persons claiming the liability protections conduct all appropriate inquiries into prior ownership and use of a property prior to or on the date a person acquires a property.

A key provision of the Brownfields Amendments was to finalize regulations setting federal standards for the conduct of all appropriate inquiries. Such federal standards were promulgated in the *Standards and Practices for All Appropriate Inquiries, Final Rule, 40 CFR Part 312*, referred to as the AAI Final Rule.

Section 312.11 of the AAI Final Rule indicates that the ASTM International Standard E1527-05/13, entitled *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, may be used to comply with the requirements set forth in Sections 312.23 through 312.31 of the AAI Final Rule. Therefore, this Phase I ESA was performed in conformance with the ASTM International Standard E1527-13.

2.2 Purpose

This Phase I ESA was conducted to meet requirement of the Revocable Permits to "conduct a Phase 1 environmental site assessment" (Revocable Permit S-7503 covering portions of fields 501, 509, and 604, Revocable Permit S-7506 covering portions of fields 501 and 502, and Revocable Permit S-7582 covering a portion of field 411), or to "conduct a Phase One (1) Hazardous Waste Evaluation (Revocable Permit S-7368 covering portions of fields 819, 911, 914, 915, and 916) prior to termination of the permits.

The purpose and goal of this Phase I ESA is to conduct an inquiry designed to identify recognized environmental conditions in connection with the Subject Property, to the extent feasible pursuant to the process described in the ASTM Practice. The term recognized environmental condition (REC) is defined as:

> "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative or a release to the environment; (3) under conditions that pose a material threat of a future release to the environment. *De minimis* conditions are not recognized environmental conditions."

As defined in the ASTM Practice, for the purposes of this Phase I ESA, the term "migrate" or "migration" refers to the movement of hazardous substances or petroleum products in any form, including, for example, solid and liquid at the surface or subsurface, and vapor in the subsurface (ASTM, 2013).

2.3 Scope of Services

The scope of work included the following:

- Development of a site description for the Subject Property including site background, physical characteristics and historical site conditions;
- Evaluation of user provided information including but not limited to environmental liens, activity and use limitations, specialized knowledge, valuation reduction of environmental issues, and other information pertaining to the property;
- Evaluation of information in programs such as NPL, CERCLIS, FINDS, ERNS, RCRA notifiers, and other governmental information systems within specific radii of the property to identify sites that would have the potential to impact the property;
- Conduct a visual site reconnaissance from publicly accessible areas detailing the current property and adjacent property conditions;
- Visual evaluation of the adjacent properties to identify high-risk neighbors and the potential for a chemical to migrate onto the property; and
- Conduct interviews with owner(s), site manager(s), occupant(s), local government official(s), and/or other individuals with past and prior use history of the property, if available;
- Complete a written report detailing the Phase 1 ESA findings, conclusions; and
- Documentation of supportive information including maps, site photographs, regulatory records, and interview(s).

2.4 Significant Assumptions

This Phase I ESA is limited by the availability of information at the time of the assessment. Interviews were conducted and interviewee's responses were assumed to be answered in good faith, to the extent of his/her actual knowledge. In addition, since no hydrogeological data was available for the Subject Property, the groundwater was assumed to flow in the direction of the surface topography of the Subject Property and surrounding areas.

2.5 Conditions and Limitations

ETC has completed this Phase I ESA for the Subject Property in accordance with the scope and limitations of ASTM Practice E1527-13. ETC's findings and conclusions contained herein are professional opinions based solely upon visual observations, interviews, and interpretation of the historical information and documents available to ETC at the time this Phase I ESA was conducted. Opinions stated in this report do not apply to changes that may have occurred after the services were performed.

ETC has performed specified services for this project with the degree of care, skill and diligence ordinarily exercised by professional consultants performing the same or similar services. No other warranty, guarantee, or representation, expressed or implied, is included or intended; unless otherwise specifically agreed to in writing by both ETC and ETC's Client.

2.6 User Reliance

This report is intended for the sole use of ETC's Client, exclusively for the project site indicated. ETC's Client may use and release this report, including making and retaining copies, provided such use is limited to the particular site and project for which this report is provided. However, the services performed may not be appropriate for satisfying the needs of other users. Release of this report to third-parties will be at the sole risk of Client and/or said user, and ETC shall not be liable for any claims or damages resulting from or connected with such release or any third party's use or reuse of this report.

3.0 SITE DESCRIPTION

3.1 Location and Description

The Subject Property consists of six non-contiguous land parcels identified as TMK (2) 2-5-1: Parcel 10, (2) 3-8-1: Parcel 46, (2) 3-8-3: Parcel 22, (2) 3-8-8: Parcels 1, 20, and 38. Specifically, the Subject Property includes the following land parcels and corresponding Hawaiian Commercial and Sugar (HC&S) fields. Note that each of these land parcels will be referred to herein by their land parcel numbers or collectively as the Subject Property.

Table 2: Subject Property Description

Tax Map Key (TMK)	HC&S Field Number (No.)	Approximate Land Area (acres)
(2) 2-5-1: Parcel 10	Portion of Field 411	0.2
(2) 3-8-1: Parcel 46	Portion of Field 604, 509, and 501	6.2
(2) 3-8-3: Parcel 22	Portion of Fields 501 and 502	1.1
(2) 3-8-8: Parcel 1 (portion)	Portion of Fields 911 and 914	353*
(2) 3-8-8: Parcel 20	Portion of Field 819	18
(2) 3-8-8: Parcel 38	Field 915 and Portion of Field 916	293

* Total parcel area is 398 acres. Area occupied by HC&S excludes portions of the parcel occupied by the Hawaii Department of Agriculture and Hawaii Department of Defense, and by other easements.

Maps of the Subject Property is included in Appendix I. No potable water sources were observed on the Subject Property. Note that apparent out-of-use septic system was observed on Parcel 38.

3.2 Physical Setting

Groundcover at the Subject Property generally consists of bare soil and vegetation (i.e. previously sugar cane fields). Parcels 1, 20, and 38 also consist of approximately eight (8) concrete structures; Parcel 10 also consists of a capped well; and Parcels 22 and 46 also consist of remnant roadways within former sugarcane fields. Except for the gulch/ditch which traverses Parcel 38 between HC&S Fields 915 and 916, the Subject Property and Surrounding areas exhibited no discernible gradient. A site plan is included as Appendix I, Figure 2. Photographic documentation of ETC's site reconnaissance is included in Appendix II.

3.2.1 Site Topography

Topographic map coverage of the Subject Property and surrounding areas is provided by the United States Geological Survey Island of Maui, Hawaii 7.5-minute Series, Maalaea, Paia, and Puu O Kali Quadrangles, 2013. The elevation of Parcels 1, 20, and 38 is approximately 40- to 160-feet above mean sea level (msl). The elevation of Parcel 10 is approximately 600-feet above mean sea level (msl). The elevation of Parcels 22 and 46 is approximately 140- to 380-feet above mean sea level (msl).

3.2.2 *Regional Geology*

The island of Maui is the second largest of the Hawaiian Islands. Maui consists of two shield volcanoes with a connecting isthmus. The volcanic rocks of the West Maui Mountains (West Maui Volcano) are divided into three series. The oldest is the Wailuku Volcanic Series, followed by the Honolua and Lahaina Volcanic Series. The Wailuku Series built the major shield volcano comprised of basaltic lava flows and associated pyroclastic deposits. The Lahaina Series then covered the western slopes of the West Maui Volcano.

The Haleakala Volcano last erupted around 1790 and is presently dormant. The shield of the volcano is composed of a'a and pahoehoe lava flows of theoliite, theoleiitic olivine basalt, and oceanite known as the Honomanu Volcano Series. The Kula Volcanic Series overlays the Honomanu Series and is comprised of hawaiite, alkalic olivine basalt, and ankaramite. Lava flows from the Haleakala volcano formed the Maui Isthmus and are made up of permeable basalt and erosional deposits (Macdonald, et al., 1983).

3.2.3 *Site Geology*

The soil on the Subject Property is mapped as a variety of soil types. Parcel 10 (Field 411) of the Subject Property is mapped as Keahua silty clay loam, 3 to 7 percent slopes (KnB). Parcel 22 (Field 501 and Field 502) of the Subject Property are mapped as Molokai silty clay loam, 3 to 7 percent slopes (MuB). Parcel 46 (Field 604) of the Subject Property is mapped as MuB and Waiakoa cobbly silty clay loam, 3 to 7 percent slopes (WfB). Parcel 1 (Field 911 and 914) of the Subject Property are mapped as Ewa silty clay loam, 0 to 3 percent slopes (EaA), Ewa cobbly silty clay loam, 0 to 3 percent slopes (EcA), and 3 to 7 percent slopes (EcB), Pulehu silt loam, 0 to 3 percent slopes (PrA), and Waiakoa extremely stony silty clay loam, 3 to 25 percent slopes, eroded (WID2). Parcel 20 (Field 819) of the Subject Property is mapped as WID2, Waiakoa very stony silty clay loam, 3 to 7 percent slopes (WgB), Pulehu silt loam, 3 to 7 percent slopes (PpB), and Alae cobbly sandy loam, 3 to 7 percent slopes (AcB). Parcel 38 (Field 915 and a portion of Field 916) of the Subject Property are mapped as, Alae Sandy Loam, 3 to 7 percent slopes (AaB), Alae cobbly sandy loam, 0 to 3 percent slopes (AcA), AcB, Pulehu silt loam, 0 to 3 percent slopes (PpA), (PrA), Pulehu clay loam, 0 to 3 percent slopes (PsA), Waikoa silty clay loam, 3 to 7 percent slopes (WeB), and WID2.

The Alae series consists of excessively drained soils on alluvial fans on the island of Maui. These soils developed in volcanic ash and recent alluvium derived from basic igneous rock. The annual rainfall for the Alae series amounts to 12- to 20- inches. The natural vegetation is feather fingergrass, kiawe, and uhaloa. These soils are generally used for sugarcane and pasture. Small areas are used for truck crops. Within the Alae series, the Subject Property is mapped as AcA, AcB, and AaB. In a representative profile, AcA surface layer is approximately 7 inches thick, very dark grayish-brown, comprised of cobbly sand loam that has angular structure. The substratum reaches a depth of 48 inches or more and is very dark grayish-brown, very dark gray, and consists of coarse to very coarse sand. The soil is neutral to mildly alkaline in the surface layer and mildly to moderately alkaline in the substratum. AcB is similar to AcA; however, AcB consist of steeper slopes. In these soils, the runoff is slow and the erosion hazard is slight AaB is also similar to AcA; however, AaB is identified by the absence of cobblestones on its surface. Within the surface layer, these soils contain many pebble-size rock fragments (USDA 1972).

The Ewa series consists of well-drained soils in basins on alluvial fans on the islands of Maui and Oahu. These soils developed in alluvium, derived from basic igneous rock. The annual rainfall for the Ewa series amounts to 10- to 30- inches. The natural vegetation consists of fingergrass, kiawe, koa haole, klu, and uhaloa. These soils are used for sugarcane and homesites. Within the Ewa series, the Subject Property is mapped as EaA, EcA, and EcB. In a representative profile, EaA surface layer is dark reddish-brown silty clay loam about 18 inches thick. The subsoil, about 42-inches thick, is dark reddish-brown and dark-red silty clay loam that has subangular block structure. The substratum is coral limestone, sand, or gravelly alluvium. The soil is neutral in the surface layer and subsoil. EaA is identified by very slow runoff and slight erosion hazard. EcA is similar to EaA; however, EcA contains of a cobbly surface layer. EcB is similar to EcA; however, consists of steeper slopes (USDA 1972).

The Keahua series consists of well-drained soils on the uplands on the island of Maui. These soils developed in material weathered from basic igneous rock. The annual rainfall for the Keahua series amounts to 15- to 25- inches. The natural vegetation consists of bufflegrass, feather fingergrass, ilima, kiawe, lantana, pitted beardgrass, and uhaloa. These soils are generally used for sugarcane. Small areas are used for pineapple, pasture, and truck crops In a representative profile, KnB surface layer is dark reddish-brown silty clay loam about 10 inches thick. The subsoil, about 50 inches thick, is dark reddish-brown silty clay loam and very dark gray clay loam that has subangular blocky structure. The substratum us dominantly soft, weathered basic igneous rock. The soil is slightly acid in the surface layer and slightly acid to neutral in the subsoil (USDA 1972).

The Molokai series consists of well-drained soils on the uplands of the islands of Maui, Lanai, Molokai, and Oahu. These soils formed in material weathered from basic igneous rock. The annual rainfall for the Molokai series amounts to 20- to 25- inches. MuB is identified by slow to medium runoff and slight to moderate erosion hazard. The natural vegetation consists of kiawe, ilima, uhaloa, feather fingergrass, and buffelgrass. These soils are used for sugarcane, pineapple, pasture, wildlife habitat, and homesites In a representative profile, MuB surface layer is dark reddish-brown silty clay loam about 15-inches thick. The subsoil, about 57- inches thick, is dark reddish-brown silty clay loam that has prismatic structure. The material at depths between 35- to 64- inches is moderately compact in place. The substratum is soft, weathered rock. The soil is slightly acid to neutral except that areas used for pineapple are commonly very strong acid or extremely acid in the surface layer (USDA 1972).

The Pulehu series consists of well-drained soils on alluvial fans and stream terraces and in basins on the islands of Lanai, Maui, Molokai, and Oahu. The annual rainfall for the Pulehu series amounts to 10- to 35- inches. The natural vegetation consists of bermudagrass, bristly foxtail, finergrass, kiawe, klu, lantana, koa haole, and sandbur. These soils are generally used for sugarcane, truck crops, pasture, homesites, and wildlife habitat. Within the Pulehu series, the Subject Property is mapped as PsA, PpA, PpB, and PrA. In a representative profile, PsA surface layer is dark brown clay loam about 21-inches thick. The subsoil consists of dark brown, dark grayish-brown, and brown massive single grain, stratifies loam. The soil is neutral in the surface layer and neutral to mildly alkaline below the surface layer. PpA is similar to PsA; however PpA is identified by its silt loam texture. This soil is primarily used for sugarcane. PpB is similar to PpA but is identified by a silt loam texture and steeper slopes. PrA is also similar to PsA; however PrA is identified by its silt loam texture and cobblestone surface. In a few places, cobblestones are present throughout the profile (USDA 1972).

The Waiakoa series consists of well-drained soils on uplands on the island of Maui. These soils developed in material weathered from basic igneous rock. The upper part of the profile is influenced by volcanic ash. The annual rainfall for the Waiakoa series amounts to 12- to 20- inches. The natural vegetation consists of buffelgrass, feather fingergrass, ilima, kiawe, uhaloa, and zinna. These soils are used for sugarcane, pasture, homesites, and wildlife habitat. Within the Waiakoa series, the Subject Property is mapped as WgB, WeB, WhB, and WID2. In a representative profile, WgB surface layer is dark reddish-brown silty clay loam about 2 inches thick. The subsoil in about 23 inches thick and consists of dark reddish-brown and very dark grayish-brown silty clay loam that has prismatic structure or is massive. The substratum is very dark brown silty clay loam and hard, basic igneous rock. The soil is neutral in the surface layer and slightly acid to neutral in the subsoil. WeB is similar to WgB; however, WeB differs in that it is comprised of very stony silty clay loam texture. WfB is also similar to WgB; however, WfB is identified as having a cobbly surface layer. Additionally, WID2 is similar to WgB; however, WID2 soils are eroded and contain stones that cover 3 to 15 percent of the surface. In most areas, about 50 percent of the surface layer has been removed by erosion (USDA 1972).

3.2.4 Regional Hydrogeology

The primary drinking water in the Hawaiian Islands is drawn from basal groundwater. Basal groundwater is formed by rainwater percolating down through the residual soils and permeable volcanic rock. The portion of the island situated below sea level is saturated with ocean salt water, except within rift zones of the volcanoes where fresh water forms a basal lens called the "Ghyben-Herzberg" lens. A zone of transition between the fresh groundwater and the ocean salt water occurs due to the constant movement of the interface as a result of tidal fluctuations, seasonal fluctuations in recharge and discharge and aquifer development (Macdonald, et al., 1983).

Downward percolation of rainwater may be stopped by impermeable layers such as dense lava flows, alluvial clay layers and volcanic ash, which can cause the formation of a perched or high level aquifer that is not in contact with salt water. Recharge of the aquifer occurs in areas of high rainfall, which are the interior mountainous areas. The groundwater flows from the recharge areas to the areas of discharge along the shoreline. Frictional resistance to groundwater flow causes it to pile up within the island until it attains sufficient hydraulic head to overcome friction. Thus, basal groundwater tends to slope toward the shoreline.

3.2.5 Site Hydrogeology

Parcel 10 (Field 411) is underlain by two aquifers within the Makawao Aquifer System, which are part of the Central Aquifer Sector on the island of Maui; and are classified by Mink and Lau, 1990, with the system identification numbers 60303214 (11121) / 60303111 (21112). Parcel 1 (Fields 911 and 914), Parcel 20 (Field 819), Parcel 22 (Fields 501 and 502), Parcel 38 (Fields 915 and Field 916), and Parcel 46 (Field 604) are underlain by two aquifer types within the Paia Aquifer System, which are part of the Central Aquifer Sector on the island of Maui; and are classified with the system ID Nos. 60302214 (33221) / 60302111 (11112) (Mink and Lau, 1990). In addition to the Paia Aquifer System, Parcel 1 (Field 914 and Field 911) and Parcel 38 (Fields 915 and 916) are also underlain by two aquifer types within the Paia Aquifer System and two aquifer types within the Kahului Aquifer System. These aquifer types are classified with the system ID No.'s 60301214 (33221) / 60301111 (12212) (Mink and Lau, 1990). Parcel 38 (Field 915 and Field 916) is also underlain by a second set of aquifer types within the Kahului Aquifer System. These aquifer types are classified with the system ID Nos. 60302116 (33321) / 60302111 (33321) (Mink and Lau, 1990).

Parcel 10 is underlain by the Makawao Aquifer System which is described as an unconfined, high level aquifer in perched formation. The groundwater within this aquifer is described as being a currently used, drinking water source with fresh salinity (<250-mg/l Cl^-). The groundwater is also described as replaceable with a high vulnerability to contamination. Parcel 010 is further underlain by a second aquifer of the same system. This aquifer is an unconfined basal aquifer in flank formations. The aquifer is considered to be a non-used water source with fresh salinity (<250-mg/l Cl^-). The groundwater is considered irreplaceable and has a moderate vulnerability to contamination (Mink and Lau, 1990).

Parcels 1, 20, 22, 38 (portion), and 46 are underlain by the Paia Aquifer System which is described as an unconfined basal aquifer in sedimentary lithology. The groundwater in this aquifer is described as being a non-drinking water source, containing moderate salinity (1000 to 5000-mg/l Cl^-). The groundwater is also described as being replaceable with a high vulnerability to contamination. This area is further underlain by a second aquifer of the same system. This aquifer is an unconfined basal aquifer in flank formations. The groundwater is considered to be a non-use water source with moderate salinity (1000 to 5000-mg/l Cl^-). The groundwater is also described as replaceable with a high vulnerability to contamination (Mink and Lau, 1990).

A portion of parcels 1 and 38 are underlain by the Kahului Aquifer System which is described is described as an unconfined high level aquifer, perched on an impermeable layer. The groundwater in this aquifer is described as a low salinity (200 to 1000-mg/l Cl^-), non-drinking water source. The groundwater is also described as replaceable with high vulnerability to contamination. This area is further underlain by a second aquifer of the same system. This aquifer is an unconfined basal aquifer in flank formations. The groundwater is described as a currently used, ecologically important water source, containing low salinity (200 to 1000-mg/l Cl^-). The groundwater is also described as irreplaceable with a moderate vulnerability to contamination (Mink and Lau, 1990).

A portion of parcel 38 is also underlain the Kahului Aquifer System which is described as an unconfined basal aquifer in sedimentary lithology. The groundwater in this aquifer is described as being a non-drinking water source, containing moderate salinity (1000 to 5000-mg/l Cl^-). The groundwater is also described as replaceable with a high vulnerability to contamination. This area is further underlain by a second aquifer of the same system. This aquifer is described as an unconfined basal aquifer in flank formations. The groundwater is described as a moderate salinity (1000 to 5000-mg/l Cl^-), non-drinking water source. The groundwater is also described as replaceable with a high vulnerability to contamination (Mink and Lau, 1990).

3.2.6 Nearest Surface Water Bodies

The nearest surface water body to Parcels 1, 20, 22, 38 and 46 is the Haiku Ditch, which traverses through both Parcels 1 and 46, and HC&S irrigation reservoirs 90, and 51. The nearest surface water body to Parcel 10 is the Kolaloa Gulch located approximately 0.25-miles north of Parcel 10.

3.3 Current Use of the Subject Property

The Subject Property is currently not actively used; and was most recently used for the commercial cultivation of sugar by HC&S. Parcels 1, 20, and 38 consist of approximately eight (8) concrete structures, several concrete/rock piles, and former sugarcane fields. Parcel 10 consists of a capped well site. Parcels 22 and 46 consist of remnant roadways within former sugarcane fields.

3.4 Current Use of the Adjoining Properties

ETC visually inspected the neighboring properties and their operations from the Subject Property and publicly accessible areas. Parcel 1 is bordered by former sugarcane fields to the north and east; Mokulele Highway to the west; and the Maui Raceway Park, Army National Guard Armory, and Hawaiian Cement (quarry) to the south. Parcel 20 is bordered by former sugarcane fields to the south, west, and east; and Hawaiian Cement (quarry). Parcel 38 is bordered by former sugarcane fields to the south and east; Mokulele Highway to the west; and Maui Raceway Park to the north. Parcel 10 is bordered by former sugarcane fields to the north, south, east, and west. Parcels 22 and 46 are bordered by former sugarcane fields to the east, west, and south; and Haleakala Highway and former sugarcane fields to the north.

4.0 USER PROVIDED INFORMATION

This section is intended to provide information obtained from the user of this Phase I ESA that will help identify RECs associated with the Subject Property. The information provided does not require the user to have the technical expertise of an environmental professional and are generally not provided by the environmental professional performing the Phase I ESA.

4.1 Required Information

In order to qualify for one of the LLPs offered by the Brownfields Amendments, the user must provide the following information (if available) to the environmental professional. Failure to provide this information could result in a determination that "all appropriate inquiry" is not complete. Mr. Sean O'Keefe, Director, Environmental Affairs, Alexander & Baldwin, Inc. (A&B), provided ETC with the following information. Mr. O'Keefe manages environmental affair for A&B and its subsidiaries, including HC&S (User).

4.1.1 Environmental Liens

The User had no information pertaining to any environmental liens or governmental notifications relating to past or recurrent violations of environmental laws with respect to the Subject Property.

4.1.2 Activity and Use Limitations

The User had no information pertaining to activity and land use limitations filed or recorded in a registry under federal, tribal, state or local law.

4.1.3 Specialized Knowledge

The User acknowledged that they possess specialized knowledge or experience related to the Subject Property. This information is discussed further in Section 7.0.

4.1.4 Valuation Reduction for Environmental Issues

The User indicated that the purpose of the Phase I ESA is for termination of its Revocable Permits (i.e. leases); therefore, valuation reduction for environmental issues pertaining to the Subject Property is not applicable.

4.1.5 Commonly Known or Reasonably Ascertainable Information

The User provided ETC with commonly known and reasonably ascertainable information about the Subject Property that would help the environmental professional to identify conditions indicative of releases or threatened releases. In addition known spills and/or chemical releases, if any, were noted. This information is discussed further in the Section 7.0.

4.1.6 Degree of Obviousness of Potential Contamination

Except for the information provided in Section 7.0, the User had no knowledge of any obvious indicators that point to the presence or likely presence of contamination at the property based on their knowledge and experience related to the Subject Property.

4.2 Other Information Pertaining to the Subject Property

4.2.1 Reason for Performing Phase I ESA

This Phase I ESA was conducted as part of the User's termination of its Revocable Permits (i.e. leases).

4.2.2 Title Records

Title records/documents were not provided by the User. However, ETC conducted a limited land title search, which is documented in Section 5.3.3.

4.2.3 Owner, Property Manager, and Occupant Information

Subject Property Manager/Occupant: Mr. Sean O'Keefe, Director,
Environmental Affairs
Alexander & Baldwin, Inc.

Subject Property Owner: Russell Tsuji
Land Management Division Administrator
Department of Land and Natural Resources
Ph: 808-587-0419

5.0 RECORDS REVIEW

5.1 Standard Environmental Record Sources

To obtain information concerning recognized environmental conditions at or near the Subject Property, ETC contracted Environmental Data Resources, Inc. (EDR) to conduct an environmental database search. EDR is a company that specializes in the review of public regulatory environmental databases. The regulatory agency report provided (Appendix IV) is based on an evaluation of the data collected and compiled by a contracted data research company. The report is a radius search report, which focuses on both the Subject Property and adjacent properties that may impact the Subject Property. Adjacent properties listed in governmental environmental records are identified within a specific search radius (Table 2). The search radius varies depending on the particular record being researched. The search is designed to meet the requirements of the current industry approach as described in ASTM Practice E1527-13. The information provided is assumed to be correct and complete, unless noted otherwise.

Table 2: ASTM Practice Environmental Record Sources and Recommended Search Distances

Environmental Database Sources	ASTM Practice Search Distances (miles)
Federal NPL Site List	1.0
Federal Delisted NPL Sites	0.5
Federal CERCLIS List	0.5
Federal CERCLIS NFRAP Site List	0.5
Federal RCRA CORRACTS Facilities List	1.0
Federal RCRA non-CORRACTS TSD Facilities List	0.5
Federal RCRA Generators List	Subject Property and adjoining properties
Federal Institutional Control/Engineering Control Registries	Subject Property only
Federal ERNS List	Subject Property only
State-Equivalent NPL	1.0
State-Equivalent CERCLIS	0.5
State Landfill and/or Solid Waste Disposal Site Lists	0.5
State Leaking UST List	0.5
State Registered UST List	Subject Property and adjoining properties
State Institutional Control Registry	Subject Property only
State Voluntary Cleanup/Response (VCP/VRP) Sites	0.5
State Brownfield Sites	0.5

5.1.1 Federal NPL and Delisted NPL

The National Priorities List (NPL) is the Environmental Protection Agency's (EPA) database of uncontrolled or abandoned hazardous waste properties, which are considered to pose an immediate threat to human health and the environment. These properties are identified for priority remedial response actions under the Superfund Program. The Subject Property was not identified as a NPL site or a delisted NPL site. The database did not identify any delisted NPL sites within a 0.5-mile radius of the Subject Property. In addition, the database did not identify any NPL sites within a 1-mile radius of the Subject Property.

5.1.2 Federal CERCLIS and CERCLIS NFRAP

The Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database contains information on various aspects of potentially uncontrolled or abandoned hazardous waste properties from initial screening and assessment phases to listing on the NPL. The Subject Property was not identified as an active CERCLIS site or a CERCLIS No Further Remedial Action Planned (NFRAP) site. The database did not identify any active CERCLIS facilities or CERCLIS NFRAP facilities within a 0.5-mile radius of the Subject Property.

5.1.3 Federal RCRA CORRACTS

The RCRA Corrective Action Sites (CORRACTS) database contains Resource Conservation Recovery Information System (RCRIS) sites with reported corrective action. The Subject Property was not identified as a CORRACTS facility. The database search did not identify any CORRACTS site within a 1-mile radius of the Subject Property.

5.1.4 Federal RCRA (non-CORRACTS) TSD Facilities

The EPA's RCRA program identifies and tracks hazardous waste from the point of generation to the point of final disposal. The RCRA Treatment, Storage or Disposal (TSD) facility database compiles those reporting facilities that treat, store, or dispose of hazardous waste. The Subject Property was not identified as a RCRA TSD facility. The database search did not identify any RCRA TSD facilities within a 0.5-mile radius of the Subject Property.

5.1.5 Federal RCRA Generator

The RCRA Generator database is a compilation by EPA's RCRIS of regulated facilities that generate hazardous waste. The Subject Property was not identified as a RCRA Generator. The database did not identify any RCRA generators located on potential adjoining properties with respect to the Subject Property.

5.1.6 Federal Institutional Control/Engineering Control Registries

Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health. Institutional Controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on a site. The EPA Institutional Control and Engineering Control registry maintains a listing of sites with Institutional or Engineering Controls in place. The Subject Property was not identified as having institutional or engineering controls in place.

5.1.7 Federal ERNS

The Emergency Response Notification System (ERNS) tracks the initial notification of reported oil and hazardous material spills. The database contains information regarding the discharger, release date, material, amount released, incident location and release action taken. The Subject Property was not identified as an ERNS facility.

5.1.8 State Equivalent NPL and CERCLIS

The CERCLIS List is a compilation of known or suspected uncontrolled or abandoned hazardous waste sites. These sites either have been investigated or are currently under investigation by the EPA for the release, or threatened release, of hazardous substances. Once a site is placed in CERCLIS, it may be subjected to several levels of review and evaluation and ultimately placed on the National Priorities List. The State of Hawaii does not have a formal "State Superfund" program; therefore, the State Hazardous Waste Sites (SHWS) are the State of Hawaii's equivalent to the federal EPA's CERCLIS database. Additionally, because this information is acquired from the Hawaii Department of Health (DOH) Hazard Evaluation and Emergency Response (HEER) Office, these sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup that use state funds (state equivalent superfund) are identified along with sites where cleanup is paid for by the potentially responsible parties. The Subject Property was not identified as a SHWS. The database search did not identify any SHWS facilities within a 1-mile radius of the Subject Property.

5.1.9 State Landfill and/or Solid Waste Disposal

The State of Hawaii has records of all facilities that have received a solid waste management permit, including solid waste landfills, transfer stations, and incinerators. The Subject Property was not identified as a Solid Waste Facility/Landfill (SWF/LF) facility. The database search did not identify any SWF/LF facilities within a 0.5-mile radius of the Subject Property. Although the Subject Property is not listed as a SWF/LF facility, ETC understands that the *Maui Airport Landfill* site is located on the northwest portion of Parcel 38. The *Maui Airport Landfill* site is discussed in Sections 7.0 and 8.3.2.

5.1.10 State Leaking Underground Storage Tanks

The DOH Underground Storage Tank (UST) Program maintains a listing of all reported leaks and releases from USTs. The Subject Property was identified as a leaking underground storage tank (LUST) facility. In addition, the database search identified one (1) LUST facility within a 0.5-mile radius of the Subject Property.

5.1.11 State Registered Underground Storage Tanks

The DOH Underground Storage Tank (UST) Program registration system tracks known and registered UST systems. The Subject Property was identified as a UST facility. The database search did not identify any UST facilities located on potential adjoining properties with respect to the Subject Property.

5.1.12 State Institutional Control Registry

Institutional Controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on a site. The State Institutional Control listing includes Voluntary Response Program and Brownfields sites with institutional controls in place. The Subject Property was not identified as having institutional controls in place.

5.1.13 State Voluntary Cleanup/Response Sites

The Hawai'i Voluntary Response Program (VRP) was created on July 7, 1997 by amendments made to Hawaii's Environmental Response Law (ERL). The purpose of the VRP is to streamline the cleanup process in a way that will encourage prospective developers, lenders, and purchasers to voluntarily cleanup properties. The VRP facilitates the cleanup process and, in certain situations, provides relief from the strict liability provisions of the Federal CERCLA and Hawai'i ERL. The Subject Property was not identified as a VRP site. The database search did not identify any VRP sites located within a 0.5-mile radius of the Subject Property.

5.1.14 State Brownfields

A Brownfields site is land which the expansion, redevelopment, or reuse of may be complicated by the presence or potential presence of a hazardous substance, pollutant or contaminant. The Subject Property was not identified as a Brownfields site. The database search did not identify any Brownfields sites located within a 0.5-mile radius of the Subject Property.

5.1.15 Unmappable/Orphan Sites

Seven (7) unmappable sites were identified in the Orphan Summary of the EDR Report. Unmappable sites are not plotted due to poor or inadequate address information. Due to the inaccurate or incomplete information provided by the respective agency, these sites cannot be plotted with confidence. Review of the addresses and site names indicated that the orphan sites are not located on potential adjoining property.

5.2 Additional Environmental Record Sources

The EDR database also included a number of other regulatory databases that are not specified by the ASTM Practice. The Subject Property was identified to be a potential Formerly Used Defense Site (FUDS), FINDS, and ECHO site. The EDR database did not identify the Subject Property in the following databases:

ODI – Open Dump Inventory

DEBRIS REGION 9 – Torres Martinez Reservation Illegal Dump Site Locations

US CDL – Clandestine Drug Labs

US HIST CDL – National Clandestine Laboratory Register

LIENS 2 – CERCLA Line Information

LUCIS – Land Use Control Information System

HMRIS – Hazardous Materials Information Reporting System

DOT OPS – Incident and Accident Data

CONSENT – Superfund (CERCLA) Consent Decrees

ROD – Records of Decision

UMTRA – Uranium Mill Tailings Sites

TRIS – Toxic Chemical Release Inventory System

FTTS – FIFRA/TSCA Tracking System

HIST FTTS – FIFRA/TSCA Tracking System Administrative Cases

SSTS – Section 7 Tracking Systems

ICIS – Integrated Compliance Information System

PADS – PCB Activity Database System

MLTS – Material Licensing Tracking System

RADINFO – Radiation Information Database

RAATS – RCRA Administrative Action Tracking System

UIC – Underground Injection Wells Listing

DRYCLEANERS – Permitted Drycleaner Facility Listing

SCRD DRYCLEANERS – State Coalition for Remediation of Drycleaners

PCB TRANSFORMER – PCB Transformer Registration Database

Manufactured Gas Plants – EDR Proprietary Manufactured Gas Plants

RGA HWS – EDR Recovered Government Archive State Hazardous Waste Sites

RGA LUST – EDR Recovered Government Archive LUST site

RGA LF – EDR Recovered Government Archive Solid Waste Facilities List

5.3 TIER 1 VAPOR ENCROACHMENT SCREEN

ETC also conducted a Tier 1 Vapor Encroachment Screen (VES) for the Subject Property. The Tier 1 VES was conducted in conformance with the scope and limitations of ASTM Practice E2600-10.

The purpose and goal of this Tier 1 VES is to conduct an inquiry designed to identify whether a vapor encroachment condition exists on the Subject Property. The term vapor encroachment condition (VEC) is defined as the "presence or likely presence of chemical(s) of concern (COC) vapors in the subsurface of the target property caused by the release of vapors from contaminated soil or groundwater or both, either on or near the target property as identified by a Tier 1 or Tier 2 screen."

To obtain information concerning VECs at or near the Subject Property, ETC contracted EDR to conduct a Vapor Encroachment Screen. The report is a radius search report, which focuses on both the Subject Property and adjacent properties that may impact the Subject Property. The search radius varies depending on the particular record being researched. The search is designed to meet the recommended search radius described in ASTM Practice E2600-10.

Table 3: ASTM Practice E2600-10

Environmental Record Sources and Recommended Search Distances

Environmental Database Sources	ASTM Practice Search Distances (miles) COC and Petroleum Hydrocarbon Chemicals of Concern
Federal NPL Site List	1/3
Federal CERCLIS List	1/3
Federal RCRA CORRACTS Facilities List	1/3
Federal RCRA non-CORRACTS TSD Facilities List	1/3
Federal RCRA Generators List	Subject Property only
Federal Institutional Control/Engineering Control Registries	Subject Property only
Federal ERNS List	Subject Property only
State-Equivalent NPL	1/3
State-Equivalent CERCLIS	1/3
State Landfill and/or Solid Waste Disposal Site Lists	1/3
State Leaking UST List	1/3
State Registered UST List	Subject Property only
State Institutional Control/Engineering Control Registries	Subject Property only
State Voluntary Cleanup/Response (VCP/VRP) Sites	1/3
State Brownfield Sites	1/3

The Subject Property was identified by the contracted database as a UST/LUST site and a FUDS site. In addition, the contracted database identified one (1) site within a 1/3-mile radius of the Subject Property. Results the VES are discussed in Section 8.3.3.

5.4 Historical Use Information on the Subject and Adjoining Properties

Historical uses of the Subject Property and adjoining properties were investigated through the review of documentation available from public land records and State of Hawaii archived information. In addition, available aerial photographs, plat maps, Sanborn maps, and building permits were reviewed.

5.4.1 Aerial Photograph Review

Aerial photographs from the EDR Aerial Photo Decade Package were reviewed. In addition, ETC reviewed available historic aerial photographs and maps at Hawaiian Commercial & Sugar Company's map office. A total of eight (8) aerial photographs were found that included Parcels 1, 20, and 38; dated 1950, 1976, 1983, 1984, 1986, 1993, 1992, and 2000. A total of four (4) aerial photographs were found that included Parcel 10; dated 1950, 1976, 1992, and 2000. A total of five (5) aerial photographs were found that included Parcels 22 and 46; dated 1950, 1959, 1975, 1992, and 2000.

Parcels 1, 20, and 38 (Fields 819, 911, 914, 915, and 916)

In the 1950 aerial photograph, the west portion of Parcel 1 appears fully developed with numerous structures. The easternmost portion of Parcel 1 appears to be fallow land with no visible structures or usage. Note that the west portion of Parcel 1 appears to be part of the former NAS Puunene which appears to extend beyond Parcel 1 to the south and west. In addition, the aircraft runways also appear to be included in Parcel 1 and 38. The remaining surrounding areas east and north of Parcel 1 appear to be fallow or used for agricultural purposes. Parcel 20 is not clearly visible in the 1950 aerial photograph; however, it appears to be partially developed with several structures. Note that Parcel 20 and the surrounding areas west of Parcel 20 appear to be part of the NAS Puunene. The remaining surrounding areas appear to be fallow or used for agricultural purposes. Parcel 38 appears fully developed with numerous structures in the 1950 aerial photograph. The developed portions of Parcel 38 appear to be part of the former NAS Puunene which appears to extend beyond Parcel 38 to the north, south, west, and east.

In the 1976 aerial photograph, except for approximately four structures on Parcel 38, all structures previously noted on Parcels 1, 20 and 38 were no longer present. In addition, Parcel 1 and Parcel 38 appear to be used for agricultural purposes. The easternmost portion of Parcel 1 and Parcel 20 appear to be fallow. Note that only a limited number of remaining structures from the former NAS Puunene are depicted in the 1976 aerial photograph. No other significant changes from the 1950 aerial photograph were noted.

The 1983 through 1986 aerial photographs included the west portion of Parcel 1 (Fields 911 and 914) and Parcel 38 (Fields 915 and 916). Approximately six structures were observed on Parcel 38. The remaining areas of Parcels 1 and 38 appear to be primarily used for agricultural purposes. The surrounding areas appear similar to the 1976 aerial photograph with no significant changes.

The 1993 aerial photograph included Parcel 20 (Field 819). Parcel 20 appears to be used for agricultural purposes. The north adjacent property appears to be used for commercial purposes (i.e. Hawaiian Cement). The remaining surrounding areas appear to be used for agricultural purposes.

In the 1992 and 2000 aerial photographs, Parcels 1, 20, and 38 and corresponding surrounding areas appear similar to the 1976 aerial photograph with no significant changes. In addition, the 2000 aerial photograph appears similar to the current configuration of the Subject Property.

Parcel 10 (Field 411)

In the 1950 aerial photograph, Parcel 10 and its surrounding areas appear to be used for agricultural purposes. No visible structures were observed. The 1976, 1992, and 2000 aerial photographs appeared similar to the 1950 aerial photograph with no significant changes.

Parcels 22 and 46 (Fields 501, 502, 509, and 604)

In the 1950 and 1959 aerial photographs, Parcels 22 and 46 appear to be roadways (i.e. Haleakala Highway). Surrounding areas primarily consists of apparent agricultural fields. A limited area of development is noted south of Parcel 46 near the boundary of Fields 604 and 509.

In the 1975 aerial photograph, Parcels 22 and 46 appear similar to the 1950 aerial photograph with no significant changes. In addition, the Haleakala Highway appears to be realigned with a roadway north of Parcels 22 and 46. The surrounding areas appear similar to the 1950 aerial photograph with no significant changes.

In the 1992 aerial photograph, Parcel 22 appears to have been incorporated into the adjacent fields and is no longer part of Haleakala Highway, which appears to have been realigned north of the Parcel 22. Parcel 46 appears to be a roadway; however, it does not appear to be part of Haleakala Highway, which appears to be realigned north of the Parcel 46.

In the 2000 aerial photograph, Parcels 22 and 46 and the corresponding surrounding areas appear similar to the 1992 aerial photograph with no significant changes. In addition, the 2000 aerial photograph appears similar to the current configuration of the Subject Property.

5.4.2 Fire Insurance Maps

ETC contracted EDR to conduct a search for Sanborn fire insurance maps of the Subject Property. The search indicated that the Subject Property is an Unmapped Property and therefore no Sanborn Map has been produced.

5.4.3 Historical Map Review

ETC reviewed available historic maps at Hawaiian Commercial & Sugar Company's map office. These included various field/plantation maps, contour maps, and facility site maps. Numerous maps (>50) were found that included portions of Subject Property. These maps were dated were dated from 1910 to 2016.

Parcel 1, 20, and 38 (Field 819, 911, 914, 915, and 916)

Parcels 1, 20 and 38 (Fields 819, 911, 914, 915, and 916) are noted to be agricultural fields (labeled as Fields M, N, P, and 13) in the maps dated from 1910 to 1939. In the 1943 through 1963 maps, Parcels 1, 20, and 38 are developed and generally labeled as part of the east adjacent NAS Puunene. Specifically, several structures including but not limited to a barracks, tennis court, mess hall, offices, warehouse, etc. were observed on Parcel 1 and 38. Features of note on Parcels 1 and 20 include an apparent aircraft runway. In addition, two 100,000-gallon aviation gasoline tanks are noted on Parcel 38. The surrounding areas north of Parcel 1 appear to be used for agricultural purposes. The south, west, and east adjacent areas appear to part of the NAS Puunene. Features of note on the adjacent areas include an apparent aircraft runway, four 100,000-gallon aviation gasoline tanks, and a rubbish dump (leased to the U.S. Navy). In the 1968 map, with the exception of a few structures on Parcel 38, all previously observed structures are no longer present. In addition, except for the easternmost portion of Parcel 1, all areas appear to be used for agricultural purposes (i.e. Fields 819, 911, 914, 915, and 916). In addition, the NAS Puunene appears to be relabeled as the Puunene Airport. The area remained relatively unchanged in the 1969 through 2012 maps with no significant changes.

Parcel 10 (Field 411)

Parcel 10 (Field 411) is noted to be within agricultural fields (labeled as Field 88/409) in the maps dated from 1949 to 1952. Note that Parcel 10 and the surrounding areas appear to be used for agricultural and pasture purposes. From 1962 to 2016, Parcel 10 remained relatively unchanged; however, the corresponding field number was changed to 411. The surrounding areas appear to be used for agricultural purposes.

Parcels 22 and 46 (Fields 501, 502, 509, and 604)

Parcels 22 and 46 (Fields 501, 502, 509, and 604) are noted to be roadways within agricultural fields (labeled as Fields D, 6, and 9) in the maps dated from 1910 to 1949. From 1949 to 2016, Parcels 22 and 46 remained unchanged; however, the corresponding field numbers were changed to 501, 502, 509 and 604. The surrounding areas appear to be used for agricultural purposes.

5.4.4 Property Tax Files and Land Title Records

ETC conducted a limited chain of title search for the Subject Property at the Honolulu County Property Tax office. ETC is not a professional title search company and does not warrant the completeness or accuracy of the information provided, but considers the data useful in screening the Subject Property for environmentally suspect owners or lessees.

Review of the property records indicated that the Subject Property, identified as TMKs (2) 2-5-1: Parcel 10; (2) 3-8-1: Parcel 46; (2) 3-8-3: Parcel 22; and (2) 3-8-8: Parcels 1, 20, and 38 are currently owned by the State of Hawaii - Department of Land and Natural Resources (DLNR). Parcel 10 has been owned by the State of Hawaii (formerly known as the Territory of Hawaii) since 1976. Prior to 1976, Parcel 10 was owned by Alexander & Baldwin Inc. Parcel 46 has been owned by the State of Hawaii since at least 1976. Parcel 22 has been owned by the State of Hawaii since at least 1979. Parcels 1, 20, and 38 have been owned by the State of Hawaii since 1948. Prior to 1948, the United States of America owned the Subject Property. Note that the United State of America appears to have 'taken' the Subject Property from HC&S in or around 1945 via an Order of Condemnation.

5.4.5 Building Permit Records

A review of available building permits issued by the County of Maui indicated that there are no permits pertaining to the Subject Property.

6.0 SITE RECONNAISSANCE

ETC performed a site reconnaissance on October 24, 2016 in order to complete a visual survey to identify the use and/or storage of hazardous materials.

6.1 Methodology and Limiting Conditions

ETC personnel performed the site reconnaissance by systematically inspecting all accessible areas within the Subject Property parcels. Due to safety concerns, the apparent ditch areas which traverse east-west across Parcel 38 were inspected from the borders of the ditch. No other areas of the Subject Property were restricted from ETC's visual observation. Maps of the Subject Property are included in Appendix I. Photographic documentation of ETC's site reconnaissance is included in Appendix II.

6.2 General Site Setting

The Subject Property consists of a 398-acre land Parcel 1 (Fields 911 and 914), 293-acre land Parcel 38 (Fields 915 and 916), 17.9-acre land Parcel 20 (Field 819), 6.2-acre land parcel 46 (Fields 604, 509, and 501), and 1.1-acre portion of land Parcel 22 (Fields 501 and 502). The Subject Property consists of former sugarcane land, of which a portion of the lands are situated on the former NAS Puunene (later known as the Puunene Airport). As a result several out-of-use remnant concrete structures (e.g. bunkers, foundations, etc.) were noted on the Subject Property.

6.3 Observations

Visual inspection of the Subject Property indicated that the groundcover generally consisted of vegetation and bare soil. In general, the Subject Property was observed to be used for sugarcane cultivation. Approximately eight single story concrete structures (e.g. bunkers, building remnant foundations, etc.) were observed on Parcel 38 (Fields 915 and 916). The accessible interior areas appeared to be vacant and unoccupied. Stockpiles of concrete rubble, asphalt, rocks/boulders, and miscellaneous metal were also observed on the Subject Property. In addition, several solid waste items (i.e. glass bottles, metal, etc.) were observed on the ground surface of the apparent solid waste landfill located on Parcel 38 within Field 915. An apparent 500,000-gallon concrete reservoir (i.e. cistern) is located on Parcel 1. In addition, a former encroachment area along the northeast border of the Parcel 1 was also noted. While no active encroachments were noted, evidence of crushed asphalt groundcover was observed in this area. No active releases or heavy petroleum-like staining was observed in this area. An apparent well was observed on Parcel 10. The wellhead has reportedly been capped. No other evidence of the generation, storage or disposal of hazardous or regulated wastes was observed on the Subject Property. No active potable water and no active sewer system infrastructure were observed on the Subject Property. In addition, no drains or sumps were noted on the Subject Property.

6.3.1 USTs / ASTs

A visual inspection for the presence of USTs or aboveground storage tanks (ASTs) was also conducted. An apparent 500,000-gallon concrete water reservoir was observed on Parcel 1 near Field 815. This structure is reportedly a likely remnant from the former NAS Puunene. No other visual evidence (i.e. vent or fill pipes, dispensers, etc.) of the presence of USTs or ASTs was observed.

6.4 Hydraulic and Dielectric Fluid Containing Equipment

A visual inspection for hydraulic and electrical equipment or electrical components that use fluid that may contain PCBs was conducted. No suspect PCB-containing equipment was observed on the Subject Property.

7.0 INTERVIEWS

The objective of the interviews is to obtain information from past and present owners, operators, and occupants of the Subject Property to identify potential RECs in connection with the Subject Property.

Mr. Sean O'Keefe, Director Environmental Affairs, Alexander & Baldwin Inc., Hawaiian Commercial and Sugar Company, Subject Property Occupant

Mr. O'Keefe provided ETC with the following information regarding the Subject Property:

- Mr. O'Keefe's knowledge of the Subject Property dates back approximately 23 years.
- The Subject Property was under cultivation for sugarcane by HC&S from at least 1910. Note that some areas were in pasture for part of the time between 1910 and 1942. By 1939, portions of Field 914 were converted to use as the Puunene Airport (Maui Airport), and by about 1942, the airport had been converted to military use. By 1945, NAS Puunene had been expanded to include all or portions of Fields 819, 911, 914, 915, and 916 (i.e. Parcels 1, 20, and 38). The United States Government reportedly acquired the land through condemnation in 1948, and subsequently transferred to the Territory of Hawaii (later known as the State of Hawaii). The Subject Property fields were restored to sugarcane cultivation by 1969 and have remained under cultivation through the final harvest in 2016.
- Parcel 20 (Field 819) was returned to sugarcane cultivation in or around 1980. In addition, an 8.4-acre portion of Parcel 20 was leased to Makimoto Farm to grow unspecified crops from 1970 to 1996, at which time the land was also returned to sugarcane cultivation. A rock crusher and hot mix (asphalt) plant may have been located on the north portion of Parcel 20. These activities likely occurred either during the NAS Puunene occupancy or before the land was acquired from HC&S. The more modern quarry uses on the State of Hawaii owned parcels (which appear to have been begun in the 1970's) resulted in the lands being withdrawn from HC&S's lease lands. Therefore, Parcel 20 likely did not have commercial quarrying operation on it. This is also consistent with the designation of the road into this area as 'Crusher Road' on the NAS Puunene maps.
- An adjacent State of Hawaii owned parcel was converted to a quarry in or around 1983 and remains in that use today.
- Approximately 70 to 75 acres of State of Hawaii owned land located southwest of Field 815 and north of the existing Hawaii Cement Quarry was apparently not returned to sugarcane cultivation. Note that field maps suggest that HC&S had planned to begin farming this area in 1980 when the adjacent Field 815 was converted to drip irrigation; however, crop records indicate that the land was not cultivated. Although this area was not part of the NAS Puunene, maps indicate a 500,000-gallon concrete water reservoir and associated domestic water pipelines located in this area.
- Various portions of the Subject Property were not suitable for sugarcane cultivation due to the presence of structures, pavement, debris piles, and other wastelands; therefore, these areas were not returned to cultivation after being vacated by the military.

- The fields surrounding parcels 46 and 22 (Fields 604, 501, 502, and 509) were under sugarcane cultivation from at least 1910 through the final harvest in 2016. Since at least 1910, a roadway (variously identified as Upper Makawao Road, Pukalani Road, and Kula Road) passed through these fields at the approximate alignment of the current Haleakala Highway. During the 1970's, portions of Haleakala Highway were realigned, creating the roadway remnant parcels within Fields 604, 501, 502, and 509.
- Field 411, which includes Parcel 10 was under cultivation for sugarcane from at least 1910 through the final harvest in 2016. Parcel 10 includes a well site, which was deeded to the State of Hawaii in May 1976 and leased back to HC&S for sugarcane cultivation in 1977. The wellhead on this property is capped. The exploratory well (State Well No. 4824-01) was drilled in 1971 by DLNR, Division of Water and Land Development but was never put into use.
- The former usage of Subject Property as part of the former NAS Puunene may have included industrial uses.
- According to historic maps of the NAS Puunene, various bunkers in Fields 916 were formerly used for the storage of munitions.
- There is no domestic water supply for the Subject Property; however, abandoned domestic water infrastructure associated with the NAS Puunene may still be present.
- The irrigation water sources to the Subject Property fields are various HC&S irrigation ditches and reservoirs.
- There is no known active sewer system on the Subject Property; however, abandoned sewer infrastructure associated with the NAS Puunene, including cesspools and septic systems may still be present.
- There are no known floor drains or sumps on the Subject Property.
- There are no known transformers on the Subject Property.
- There are no USTs (underground storage tanks) or ASTs (aboveground storage tanks) on the Subject Property. USTs are known to have been present at various locations on the NAS Puunene, and several have been removed; however, it is unknown whether any USTs remain.
- Fertilizers and pesticides/herbicides commonly used on sugar plantation were used on the Subject Property. Arsenic may have been present in the older herbicides historically used on the Subject Property. In addition, a concrete storage bunker on Field 915 was historically used for limited storage of pesticides; however, these chemicals were removed and properly disposed, and the concrete floor was cleaned of any staining or residue.
- No PCBs were used by HC&S on the Subject Property. However, in 1998, a leaking PCB transformer site was found in a concrete structure in Field 915 and was subsequently reported to DLNR by HC&S. The transformer site was reportedly cleaned up to the satisfaction of regulatory agencies using FUDS funding. Note that this transformer site was associated with the former NAS Puunene and was not used by HC&S.

- Asbestos has been identified in some building materials and underground piping associated with the NAS Puunene. No asbestos was used or stored by HC&S on the Subject Property.
- A variety of construction materials, supplies, equipment, and records were stored in the concrete bunkers on the Subject Property over the years. These materials have all been removed.
- No waste or rubbish has been buried on the Subject Property by HC&S. A former U.S. Navy landfill is known to have been located in Field 915 and has been the subject of an environmental investigation. In addition, the Maui Military Museum conducted a limited excavation of Field 915 landfill based on the historical evidence that planes and other war-era surplus equipment may have been buried there. The Navy also leased the land on a privately-owned parcel partially occupied by HC&S Field 819 for a rubbish dump. The rubbish dump appears to have been located south of the State of Hawaii owned parcel partially occupied by Field 819 (not part of Subject Property).
- An unpermitted solid waste management facility was formerly operated at a piggery located on private land adjacent to the Subject Property; however, the site has been cleaned up to the satisfaction of the DOH.
- There are areas within or near the fields where concrete, asphalt, steel and similar materials, apparently generated by the demolitions of structures at the former NAS Puunene, have been disposed of in piles.
- No known waste or rubbish has been burned on the Subject Property; however, agricultural burning of the sugarcane fields (i.e. pre-harvest burning) has been conducted on the Subject Property for many years.
- No oils or lubricants were used on the Subject Property except to the extent used in farm equipment which operated on the Subject Property.
- There are no known current or former gas stations on the Subject Property.
- There are no current or former maintenance shops on the Subject Property.
- There are no known chemical pipelines on the Subject Property.
- Runoff onto the Subject Property from the adjoining road and/or sugarcane fields is likely.
- Except for the former landfill previously noted, there are no current or former pits, ponds, or lagoons located on the Subject Property in connection with waste treatment or disposal.
- The Subject Property and adjoining properties are not used as a printing facility, gasoline station, motor repair facility, dry cleaner, photo developer, laboratory, junkyard, landfill, waste TSDF, or recycling facility. However, the Subject Property was formerly part of NAS Puunene, which may have included some of the above uses.
- There are no known environmental liens or governmental notifications relating to past or recurrent violations of environmental laws with respect to the Subject Property.

8.0 FINDINGS AND OPINIONS

8.1 Site Description

No significant findings to indicate suspect RECs, historical RECs, controlled RECs, or *de minimis* conditions were identified.

8.2 User Provided Information

The User provided extensive historical information regarding the Subject Property uses and conditions. This User provided information is discussed further in Section 8.5. No other significant findings to indicate suspect RECs, historical RECs, or *de minimis* conditions were identified.

8.3 Records Review

8.3.1 Standard Environmental Record Sources

Federal NPL and Delisted NPL

No significant findings to indicate suspect RECs, historical RECs, controlled RECs, or *de minimis* conditions were identified.

Federal CERCLIS and CERCLIS NFRAP

No significant findings to indicate suspect RECs, historical RECs, controlled RECs, or *de minimis* conditions were identified.

Federal RCRA CORRACTS

No significant findings to indicate suspect RECs, historical RECs, controlled RECs, or *de minimis* conditions were identified.

Federal RCRA (non-CORRACTS) TSD Facilities

No significant findings to indicate suspect RECs, historical RECs, controlled RECs, or *de minimis* conditions were identified.

Federal RCRA Generator

No significant findings to indicate suspect RECs, historical RECs, controlled RECs, or *de minimis* conditions were identified.

Federal Institutional Control/Engineering Control Registries

No significant findings to indicate suspect RECs, historical RECs, controlled RECs, or *de minimis* conditions were identified.

Federal ERNS

No significant findings to indicate suspect RECs, historical RECs, controlled RECs, or *de minimis* conditions were identified.

State Equivalent NPL and CERCLIS

No significant findings to indicate suspect RECs, historical RECs, controlled RECs, or *de minimis* conditions were identified.

State Landfill and/or Solid Waste Disposal

Although the Subject Property is not listed as a SWF/LF facility, ETC understands that the *Maui Airport Landfill* site is located on the northwest portion of Parcel 38 (Field 915). The *Maui Airport Landfill* site is discussed in Sections 7.0 and 8.3.2. No other significant findings to indicate suspect RECs, historical RECs, controlled RECs, or *de minimis* conditions were identified.

State Leaking Underground Storage Tanks

The Subject Property is located on a portion of the *Former Puunene Navy Airport*, which is identified as a LUST facility. ETC requested and reviewed the *Former Puunene Navy Airport (Facility ID 9-503623)* LUST facility file at the DOH SHWB. In addition, HC&S also provided ETC with documents pertaining to the former USTs at the *Former Puunene Navy Airport* facility. Review indicated that a total of nine (9) USTs located on the former NAS Puunene were closed in 2000. Note that additional tanks were located west of the Subject Property across Mokulele Highway; however, the USTs were not included as part of the UST closures in 2000. The nine (9) closed USTs consisted of three (3) sites, Site 1 consisted of three (3) 50,000-gallon aviation fuel USTs, Site 2 consisted of four (4) 25,000-gallon aviation fuel USTs, and Site 3 consisted of two (2) 50,000-gallon aviation fuel USTs. The *Final Underground Storage Tank Closure Report*, dated July 2, 2001, prepared by Environmental Chemical Corporation (ECC) indicated that Site 1 was located along Kamaaina Road on Parcel 1; and Site 2 and Site 3 were located within the south portion of Parcel 35 which is west of the Subject Property across Mokulele Highway. However, correspondence and historical facility maps provided by HC&S indicated that both Site 2 and Site 3 were incorrectly mapped in ECC's report. Specifically, Site 2 was located on the southwest portion of Parcel 1 and Site 3 was located on the northwest portion of Parcel 38. Site 1 was situated on the area of Parcel 1 known as the Department of Agriculture cattle staging area, which is excluded from the Subject Property. In addition, Site 2 was situated on a portion of Parcel 1 referred to as the 'armory' (i.e. Army National Guard Armory), which is also excluded from the Subject Property. Site 3 was the only UST site located on the Subject Property near the northwest border of Parcel 38. Note that no documentation of a correction to DOH's UST facility file regarding the former UST locations was found during ETC's file review. Review indicated that a release at Site 1 and Site 2 (DOH Release ID 000079) was observed and reported to the DOH during UST closure activities in 2000. Subsequent release response activities were completed including the over excavation and onsite aeration of approximately 15-cubic yards of petroleum contaminated soils. Following aeration and confirmation sampling, the soils were utilized as excavation backfill at the facility. Note that no over excavation of Site 3 was performed. The DOH subsequently issued the facility a letter dated May 1, 2001 indicating that 'no further action' was required in response to the release. Based on these findings, the UST release associated with the *Former Puunene Navy Airport* facility is not considered an REC for the Subject Property.

In addition to the Subject Property LUST findings, database review indicated that *Rojac Trucking (Facility ID 9-503008)* was mapped within 0.5-miles of Parcel 46. However, database and address review indicated that the *Rojac Trucking* LUST facility, located at 591 Haleakala Highway was incorrectly mapped. Specifically, database address indicates that the facility is located greater than 2-miles northwest of the Subject Property. Therefore, this finding is not considered an REC for the Subject Property.

State Registered Underground Storage Tanks

The *Former Puunene Navy Airport (Facility ID 9-503623)* facility located on the Subject Property was discussed as part of the Leaking Underground Storage Tanks review section and therefore will not be repeated here.

State Institutional Control Registry

No significant findings to indicate suspect RECs, historical RECs, controlled RECs, or *de minimis* conditions were identified.

State Voluntary Cleanup/Response Sites

No significant findings to indicate suspect RECs, historical RECs, controlled RECs, or *de minimis* conditions were identified.

State Brownfields

No significant findings to indicate suspect RECs, historical RECs, controlled RECs, or *de minimis* conditions were identified.

Unmappable/Orphan Sites

No significant findings to indicate suspect RECs, historical RECs, or *de minimis* conditions were identified.

8.3.2 Additional Environmental Record Sources

The Subject Property was identified as a FUDS, FINDS, and ECHO site by the contracted database. The FINDS and ECHO listings were associated with the *Puunene Armory* site, which is not included as part of the Subject Property. As such, ETC requested and reviewed all available files at the DOH HEER Office for *Maui Airport Military Reservation* FUDS facility. The Subject Property was identified to be in proximity to the NAS Puunene (also known as the *Maui Airport Military Reservation*) FUDS site. Historical records indicate that the Subject Property was in fact part of the former NAS Puunene site. Historical records indicate that the portions of the Subject Property and adjacent areas were established by the Territory of Hawaii as a civil airfield known as the Puunene Airport in or around 1937. Navy use of the Puunene Airport began in or around 1940; and by 1942, the Puunene Airport and immediately adjacent areas which included the Subject Property were commissioned as Naval Air Station Maui. In 1943, the area was renamed NAS Puunene when the Naval Air Station Kahului (NASKA) was opened. Between 1947 and 1949, the NAS Puunene was reportedly released by the Navy to the Territory of Hawaii and was reused as Maui's civil airport (known as the Maui Airport). The Maui Airport was reportedly closed between 1961 and 1969.

File review of the *Maui Airport Military Reservation* at the DOH HEER Office indicated that in addition to the USTs discussed in Section 8.3.1, a transformer release site and a former landfill were located on the NAS Puunene. Review indicated that the transformer release site and former landfill are located on Parcel 1 portion of the Subject Property. The transformer release site was cleaned up and included the removal and disposal of approximately 633-cubic yards of PCB-contaminated soil and concrete debris. The release site was subsequently backfilled and restored. As a result, the DOH HEER Office issued the facility a letter indicating that no further action (i.e. No Department of Defense Action Indicated) was required for the site. ETC's site reconnaissance of this area indicated no evidence of a release. Based on these findings, the transformer release site is not considered an REC for the Subject Property.

File review and interview findings indicated that the *Maui Airport Landfill* reportedly consisted of a 20-acre dump site that was believed to contain the remains of aircraft and other equipment that were deemed surplus for military purposes. An archaeological monitoring report prepared by Pacific Legacy, Inc., dated 2008 indicated that in 1996, the Maui Military Museum conducted excavations of the *Maui Airport Landfill*. Although the findings were not formally documented in a written report, the excavations revealed exposed military debris and NAS Puunene equipment. A subsequent environmental investigation was conducted on the former *Maui Airport Landfill* site which included soil and groundwater sampling and analyses. Investigative results indicated that elevated concentrations of arsenic, cadmium, lead, and PCBs were found in the soil. In addition, chloromethane was found in the groundwater located on the *Maui Airport Landfill*. A Remedial Investigation / Feasibility Study (RI-FS) determined that surface capping with institutional controls and natural attenuation with institutional controls were determined to be two highest ranking remedial alternatives. Telephone correspondence with Mr. Steven Mow of the DOH HEER Office revealed that there was no additional documentation regarding the closure status of the *Maui Airport Landfill*. However, Mr. Mow indicated that he believed the *Maui Airport Landfill* was a 'closed' site. Mr. Mow also indicated that Mr. Derek Yasaka of Wil Chee-Planning, Inc. (WCP) may have additional information regarding the status of the landfill. WCP reportedly conducted the environmental investigations related to the *Maui Airport Landfill*. Telephone correspondence with Mr. Derek Yasaka indicated that the RI-FS was completed and it was determined that the recommended action by the Navy was 'no action.' Mr. Yasaka indicated that the 'no action' decision was made in or around April 2014, at which point WCP's involvement with the site was terminated. Mr. Yasaka speculated that no additional actions have taken place at the *Maui Airport Landfill*. Site reconnaissance and interview findings confirmed that the *Maui Airport Landfill* site is present on Parcel 1 of the Subject Property. Based on ETC's file review, site reconnaissance, and interview findings, the *Maui Airport Landfill* is considered an REC for the Subject Property.

No other significant findings to indicate suspect RECs, historical RECs, controlled RECs, or *de minimis* conditions were identified.

8.3.3 Tier 1 Vapor Encroachment Screen (VES)

The Subject Property was identified by the contracted database as a UST/LUST site and a FUDS site. In addition, the contracted database identified one (1) site within a 1/3-mile radius of the Subject Property. All previously obtained data reviewed and discussed as part of this Phase I ESA (Section 1.0 to 8.0) were also evaluated as part of this Tier 1 VES. Review indicated that Phase I ESA findings (i.e. Sanborn Maps, Aerials, etc.) do not indicate any potential VECs in connection with the Subject Property except for the former *Maui Airport Landfill*. The former *Maui Airport Landfill* was discussed in Section 8.3.2 and therefore will not be repeated here. ETC performed a Tier 1 VES in conformance with the scope and limitations of ASTM Practice E2600-10 on the Subject Property. Except for the former *Maui Airport Landfill*, no evidence of VECs in connection with the Subject Property was identified.

8.3.4 Historical Use Information on the Subject and Adjoining Properties

Review of historical real property tax records, aerial photographs, and maps indicated the Subject Property was used for agricultural purposes as early as 1910. The historical usage and operations of the Subject Property are discussed in Section 8.3.2 and 8.5. No other significant findings to indicate suspect RECs, historical RECs, controlled RECs, or *de minimis* conditions were identified.

8.4 Site Reconnaissance

ETC's observations of the former *Maui Airport Landfill* area and transformer release site were discussed in Section 8.3.2 and therefore will not be repeated here. Stockpiles of concrete, rock, asphalt, and scrap metal were observed on the Subject Property. While no petroleum products or hazardous substances were observed from the visible surface areas of these piles; the interior areas of the piles was not visible. ETC believes that it is not likely that these stockpiles have significantly impacted the Subject Property; however, the unknown contents of these piles are considered a data gap. Data gaps are discussed further in Section 9.0.

No other significant findings to indicate suspect RECs, historical RECs, controlled RECs, or *de minimis* conditions were identified.

8.5 Interviews

Interview findings indicate that pre-harvest burning of sugarcane has been conducted on the Subject Property as part of the sugarcane cultivation operations. Note that the primary concern regarding sugarcane burning is the airborne particulate matter. As such, the former sugarcane burning is not considered to be a REC for the Subject Property.

The Subject Property has been used for commercial sugarcane cultivation since as early as 1910. Activities commonly associated with commercial sugarcane cultivation include the use and application of pesticides. As described in Section 9 of the DOH HEER Office's November 2009 *Interim Final Technical Guidance Manual for the Implementation of the Hawaii State Contingency Plan* (HEER TGM), with the exception of arsenic, residual pesticides in former sugarcane fields are rarely detected above levels of potential concern. In addition, data gathered by the DOH over the past ten years indicate that dioxins in former sugarcane fields do not pose a significant health risk (DOH, 2009). Review the DOH HEER Office's *Summary of Pesticide and Dioxin Contamination Associated with Former Sugarcane Operations* indicated that elevated

concentrations were not reported in the surface soils of sugarcane field(s) associated with the nearby Puunene Sugar Mill (DOH, 2011). No pesticide mixing sites are known to have been operated on the Subject Property. Although other contaminants associated with commercial sugarcane cultivation were not evaluated, based on these findings, the former agricultural usage of the Subject Property is considered a *de minimis* condition.

Interview findings also indicated that the Navy also leased the land on a privately-owned parcel partially occupied by HC&S Field 819 for a rubbish dump. The rubbish dump appears to have been located south of the State of Hawaii owned parcel partially occupied by Field 819 (not part of Subject Property). Based on the information provided by HC&S, the rubbish dump noted on the NAS Puunene map appears to be located southwest of Parcel 20. Interview findings also indicated that an unpermitted solid waste management facility was formerly operated at a piggery located on private land adjacent to the Subject Property; however, the site has been cleaned up to the satisfaction of the DOH. Based on these findings, these two off-site are not considered RECs for the Subject Property.

Interview findings regarding the former *Maui Airport Landfill* site and transformer release site addressed in Section 8.3.2 and therefore will not be repeated here. No other significant findings to indicate suspect RECs, historical RECs, controlled RECs, or *de minimis* conditions were identified.

9.0 DATA GAPS

Data gaps, which are defined as the lack of or inability to obtain information required for this Phase I ESA despite good faith efforts by the environmental professional to gather such information were identified during this Phase I ESA. ETC identified the following data gaps:

- Historical records sources within five year intervals were not available for review. However, since all available historical records were reviewed (i.e. aerial photos, Sanborn Maps, Chain of Title, etc.), ETC concludes that this 'data failure' does not represent a significant data gap.
- ETC personnel attempted to contact and interview a representative of DLNR, the current Subject Property land owner. The lack of interview information from the Subject Property land owner is considered a data gap for this report. At the time of this report, DLNR had not responded to ETC's request. However, information provided by a representative of the Subject Property operator (Mr. O'Keefe) coupled with the remaining Phase I ESA findings did not result in any conditions under which an REC determination could not be completed. In addition, HC&S has operated on the Subject Property from the 1960s to 2016. As such, this data gap is not considered significant. If at a later date DLNR provides information that significantly impacts the findings of this report; ETC will provide an addendum to this report.
- ETC did not inspect all areas of the Subject Property. Specifically, the gulch/ditch which traverses Parcel 38 was not inspected due to safety concerns; and inspection of these areas was limited to visual observations conducted from the borders along the ditch. The inability to access these areas of the Subject Property is considered a data gap for this report. However, based on information provided by the Subject Property Occupant (i.e. HC&S), site reconnaissance findings, and historic records, this data gap is not considered significant.
- Stockpiles of concrete, rock, asphalt, and scrap metal were observed on the Subject Property. In accordance with Hawaii Administrative Rules Title 11, Department of Health, Chapter 58.1 (HAR §11-58.1) property owners are responsible for "removing accumulated solid waste to an approved solid waste disposal facility." While no petroleum products or hazardous substances were observed from the visible surface areas of these piles; the interior areas of the piles were not visible. The quantity and size of these piles made it infeasible to adequately and fully characterize their potential environmental impact. As such, the unknown contents of these piles are considered a data gap. Based on interview findings the piles may have been created prior to 1969 and are suspected to contain demolition materials from the former NAS Puunene. While the exact contents of these piles are unknown, site reconnaissance findings and information provided by HC&S do not indicate the presence of significant quantities hazardous substances or petroleum projects. Based on these findings, this data gap is not considered significant.

10.0 CONCLUSIONS

We have performed a Phase I ESA in conformance with the scope and limitations of ASTM Practice E1527-13 of TMK (2) 2-5-1: Parcel 10, (2) 3-8-1: Parcel 46, (2) 3-8-3: Parcel 22, (2) 3-8-8: Parcels 1 (portion), 20, and 38, the Subject Property. Any exceptions to, or deletions from, the ASTM Practice E1527-13 are described in Section 11.0 of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with the Subject Property except for the following:

- The existing former *Maui Airport Landfill* site which is situated on a approximate 20-acre portion of Parcel 38; and the associated buried materials and contaminants to the soil and groundwater at the former *Maui Airport Landfill* are considered an REC.

11.0 ENVIRONMENTAL PROFESSIONAL CERTIFICATION

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

Prepared by:

Sharla Nakashima
Environmental Professional
EnviroServices & Training Center, LLC

March 2017

12.0 DEVIATIONS AND ADDITIONAL SERVICES

No client imposed constraints or additions were requested. No additional services were requested by ETC's Client. As such, there were no deviations and/or deletions from the ASTM Practice E1527-13 upon completion of this Phase I ESA.

13.0 REFERENCES

- ASTM International. Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, Designation E1527-13.
- Hawaii State Department of Health (DOH), Hazard Evaluation and Emergency Response (HEER) Office. November 2009. *Technical Guidance Manual for Implementation of the Hawaii State Contingency plan, Interim Final.*
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- Environmental Chemical Corporation. July 2001. *Final Underground Storage Tank Closure Report, Removal of Underground Storage Tanks, Former Maui Airport Site, Puunene, Maui, Hawaii.* Prepared for the Department of the Army.
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- Mink, John F. and Stephen L. Lau. February 1990. *Aquifer Identification and Classification for Maui: Groundwater Protection Strategy for Hawaii.*
- State of Hawaii Taxation Map Bureau, Tax Map Key (2) 2-5-1: Parcel 10, (2) 3-8-1: Parcel 46, (2) 3-8-3: Parcel 22, (2) 3-8-8: Parcels 1 (portion), 20, and 38.
- United States Army Corps of Engineers. September 2011. *Final Remedial Investigation / Feasibility Study, Former Maui Airport Landfill, Puunene, Maui, Hawaii, Project No. H09HI022503.*
- U.S. Department of Agriculture Soil Conservation Service. 1972. *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii.*
- U.S. Department of Interior Geological Survey. 2013. Maalaea Quadrangle, Island of Maui, 7.5 Minute Series (Topographic Maps).
- U.S. Department of Interior Geological Survey. 2013. Paia Quadrangle, Island of Maui, 7.5 Minute Series (Topographic Maps).
- U.S. Department of Interior Geological Survey. 2013. Puu O Kali Quadrangle, Island of Maui, 7.5 Minute Series (Topographic Maps).
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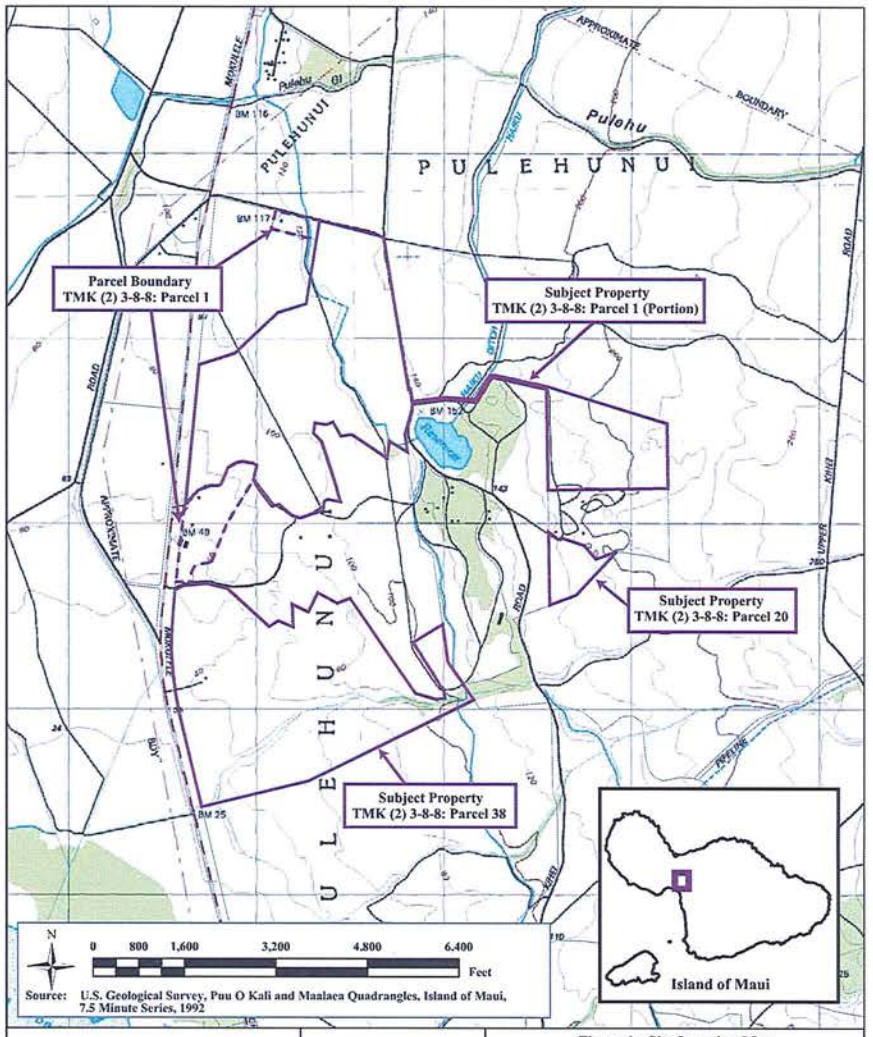
APPENDIX I
FIGURES

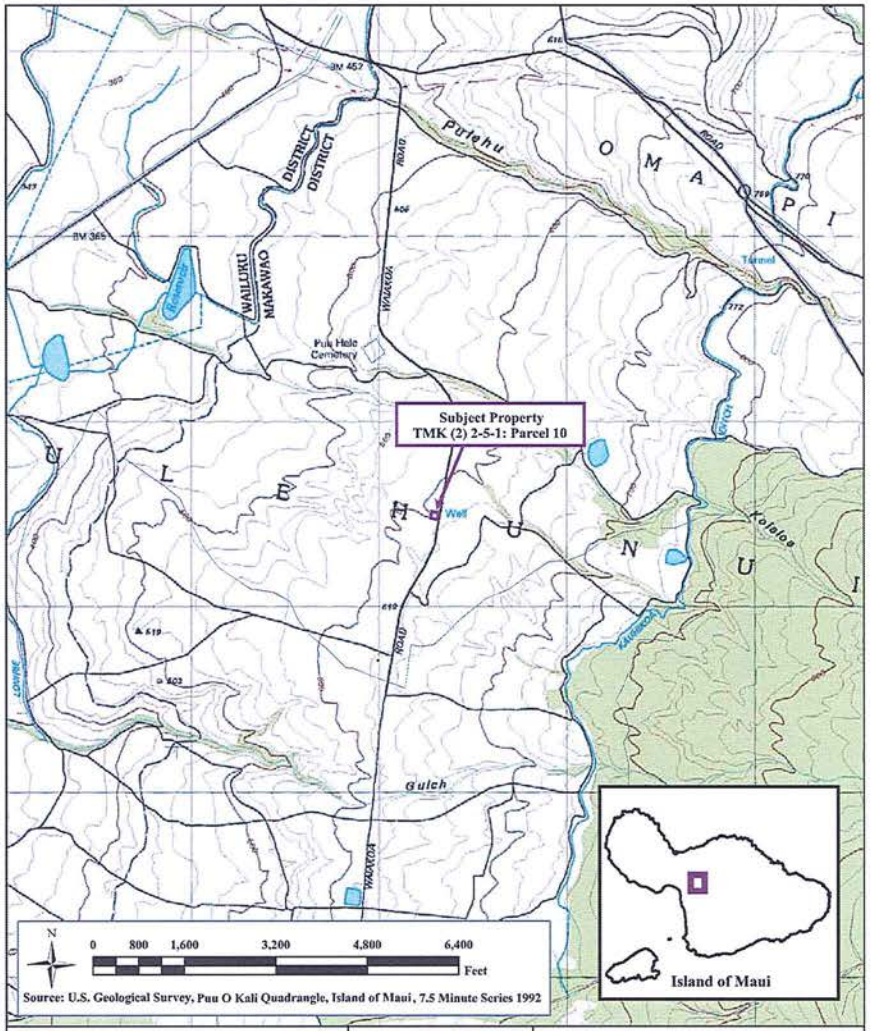


enviro SERVICES & TRAINING CENTER, LLC

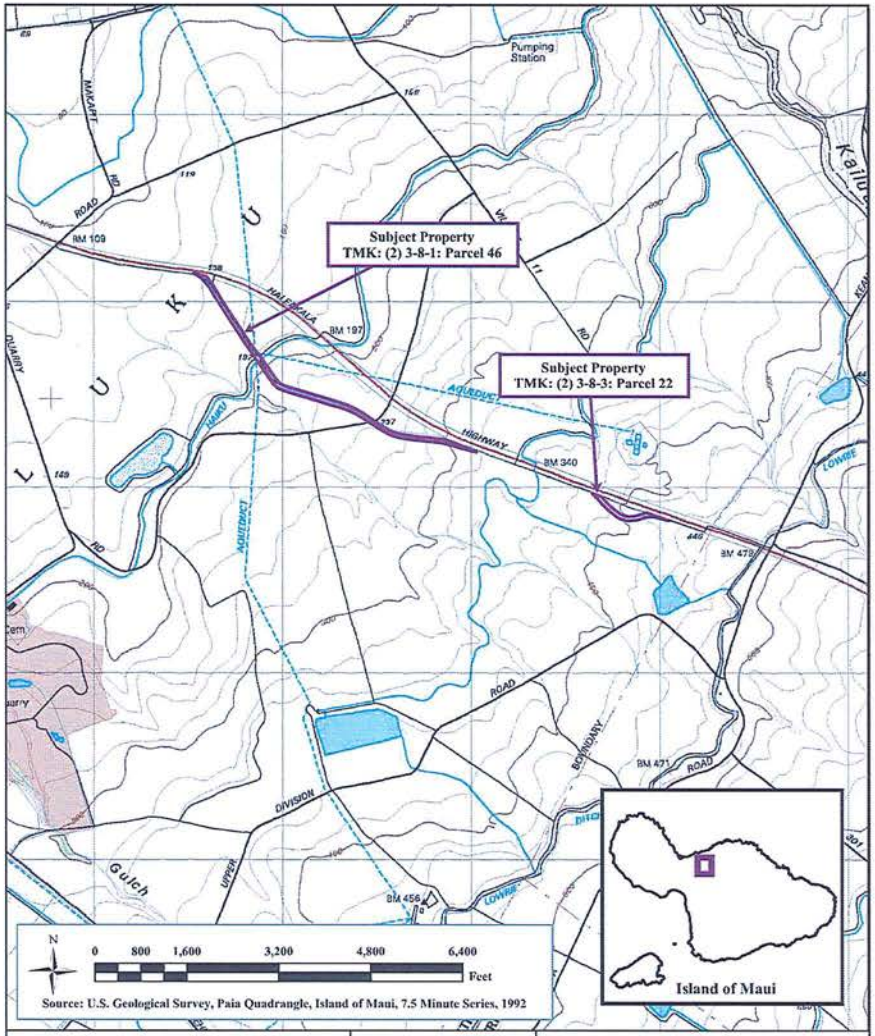
Project No. 16-1018

March 2017

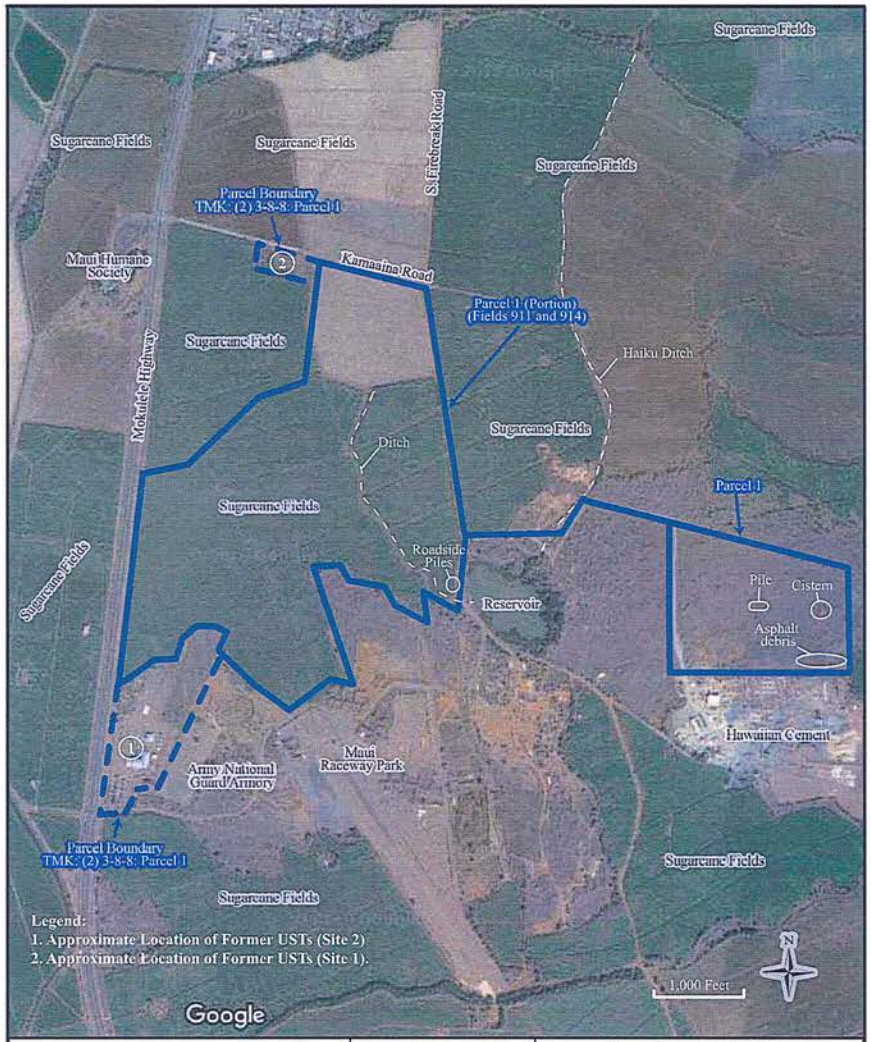
Figure 1 - Site Location Map
Parcel 1 (Fields 911 and 914), Parcel 20 (Field 819), and Parcel 38 (Fields 915 and 916)
Phase I Environmental Site Assessment
DLNR Leased Lands
Mokulele Highway, Puunene, Maui, Hawaii
TMK (2) 3-8-8: 1 (Portion), 20, and 38



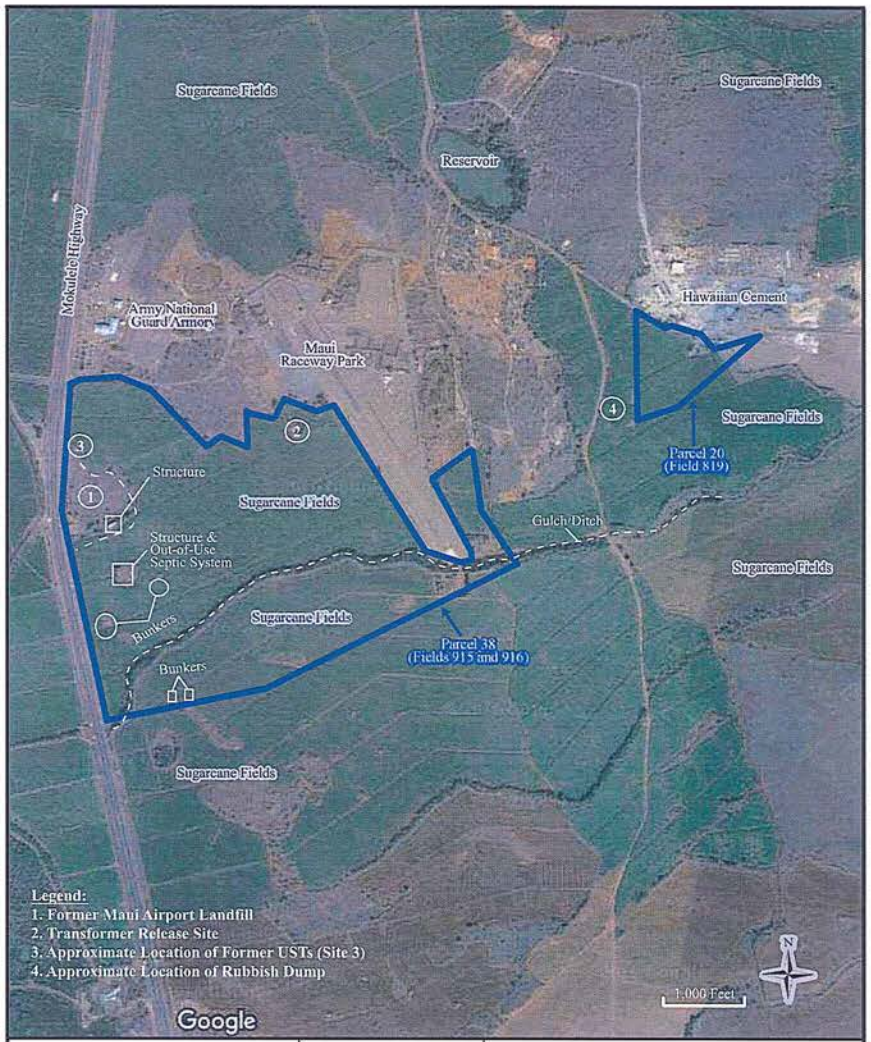
enviro SERVICES & TRAINING CENTER, LLC	Project No. 16-1018 March 2017	**Figure 2 - Site Location Map** **Parcel 10 (Field 411)** **Phase I Environmental Site Assessment** DLNR Leased Lands Waiakoa Road, Kihei, Maui, Hawaii TMK (2) 2-5-1: 10



enviro SERVICES & TRAINING CENTER, LLC	Project No. 16-1018 March 2017	**Figure 3 - Site Location Map** **Parcel 22 (Fields 501 and 502) and** **Parcel 46 (Fields 604 and 509)** **Phase I Environmental Site Assessment** DLNR Leased Lands Halcakala Highway, Kahului, Maui, Hawaii TMK: (2) 3-8-3: Parcel 22 and (2) 3-8-1: Parcel 46



enviro SERVICES & TRAINING CENTER, LLC	Project No. 16-1018 March 2017	**Figure 4 - Aerial Site Map** **Parcel 1 (Fields 911 and 914)** **Phase I Environmental Site Assessment** DLNR Leased Lands Mokulele Highway, Puunene, Maui, Hawaii TMK: (2) 3-8-8: Parcel 1 (Portion)



enviro SERVICES & TRAINING CENTER, LLC	Project No. 16-1018 March 2017	**Figure 5 - Aerial Site Map** **Parcel 20 (Field 819) and Parcel 38 (Fields 915 and 916)** Phase I Environmental Site Assessment DLNR Leased Lands Mokulele Highway, Puunene, Maui, Hawaii TMK: (2) 3-8-8: Parcels 20 and 38



enviro SERVICES & TRAINING CENTER, LLC	Project No. 16-1018 March 2017	**Figure 6 - Aerial Site Map** **Parcel 10 (Field 411)** **Phase I Environmental Site Assessment** DLNR Leased Lands Waiakoa Road, Kihei, Maui, Hawaii TMK: (2) 2-5-1: Parcel 10



enviro SERVICES & TRAINING CENTER, LLC	Project No. 16-1018 March 2017	**Figure 7 - Aerial Site Map** **Parcel 22 (Fields 501 and 502)** **Phase I Environmental Site Assessment** DLNR Leased Lands Haleakala Highway, Kahului, Maui, Hawaii TMK: (2) 3-8-3: Parcel 22



enviro SERVICES & TRAINING CENTER, LLC	Project No. 16-1018	**Figure 8 - Aerial Site Map** **Parcel 46 (Field 501, 509, and 604)** **Phase I Environmental Site Assessment** DLNR Leased Lands Haleakala Highway, Kahului, Maui, Hawaii TMK: (2) 3-8-1: Parcel 46
	March 2017	

APPENDIX II
PHOTOGRAPHIC DOCUMENTATION



Photograph 1: View of Parcel 22 (Fields 501 and 502).



Photograph 2: View of Parcel 46 (Field 604).



Photograph 3: View of well located in Parcel 10 (Field 411).



Photograph 4: View of easternmost portion of Parcel 1.

Photograph 5: View of cistern located within the easternmost portion of Parcel 1.





Photograph 6: View of easternmost portion of Parcel 1; bordering Hawaiian Cement facility.



Photograph 7: View of north portion of Parcel 1 (Fields 911 and 914).



Photograph 8: View of roadside piles along north portion of Parcel 1 (Fields 911 and 914).



Photograph 9: West view of ditch located within north portion of Parcel 1 (Fields 911 and 914)



Photograph 10: South facing view of Parcel 20 (Field 819)



Photograph 11: View of demolished structure / pile of debris and location of the transformer release site located on Parcel 38.



Photograph 12: Approximate former location of two 50,000-gallon aviation gasoline USTs on the west portion of Parcel 38 (Fields 915 and 916).



Photograph 13: View of former Maui Airport Landfill site, located along the west portion of Parcel 38 (Fields 915).



Photograph 14: View of structure located on the northwest portion of Parcel 38.



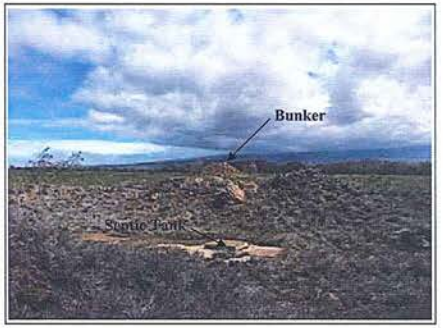
Photograph 15: View of structure located on the northwest portion of Parcel 38.



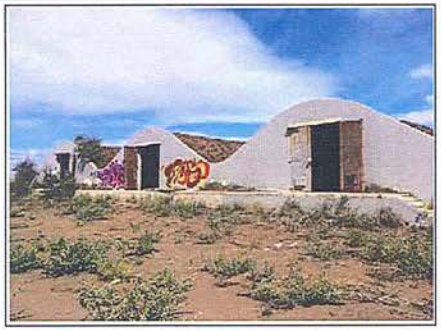
Photograph 16: View of structure on the west portion of Parcel 38.



Photograph 17: Interior view of structure located on Parcel 38.



Photograph 18: View of former bunker located on the west portion of Parcel 38.



Photograph 19: Exterior view of bunkers located along the west portion of Parcel 38.



Photograph 20: Interior view of storage bunker located on Parcel 38.



Photograph 21: View of bunker located on the southwest portion of Parcel 38 (Field 916).



Photograph 22: View of bunker located on the southwest portion of Parcel 38 (Field 916).



Photograph 23: Interior view of bunker located on Parcel 38.



Photograph 24: West view of Parcel 38 (Fields 915 and 916).

APPENDIX III
RESEARCH DOCUMENTATION

Fields 501/502 and 604
LANA ST
Kihei, HI 96753

Inquiry Number: 4748534.3
October 07, 2016

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

10/07/16

Site Name:

Fields 501/502 and 604
LANA ST
Kihei, HI 96753
EDR Inquiry # 4748534.3

Client Name:

Enviro Srvcs. and Trng. Center
505 Ward Avenue
Honolulu, HI 96814
Contact: Sharla Nakashima

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Field 411
Not Reported
Kihei, HI 96753

Inquiry Number: 4748534.13
October 07, 2016

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Site Name:

Field 411
Not Reported
Kihei, HI 96753
EDR Inquiry # 4748534.13

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Fields 815, 819, 914, 915, and 916
Not Reported
Kihei, HI 96753

Inquiry Number: 4748527.3
October 07, 2016

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

10/07/16

Site Name:

Fields 815, 819, 914, 915, and
Not Reported
Kihei, HI 96753
EDR Inquiry # 4748527.3

Client Name:

Enviro Srvcs. and Trng. Center
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Fields 815, 819, 914, 915, and 916
Not Reported
Kihei, HI 96753

Inquiry Number: 4748527.4
October 07, 2016

EDR Historical Topo Map Report
with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

10/07/16

Site Name:	Client Name:
Fields 815, 819, 914, 915, and Not Reported Kihei, HI 96753 EDR Inquiry # 4748527.4	Enviro Srvcs. and Trng. Center 505 Ward Avenue Honolulu, HI 96814 Contact: Sharla Nakashima

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Search Results:		*Coordinates:*	
P.O.#	NA	**Latitude:**	20.818536 20° 49' 7" North
Project:	16-1018	**Longitude:**	-156.45993 -156° 27' 36" West
		UTM Zone:	Zone 4 North
		UTM X Meters:	764369.37
		UTM Y Meters:	2304148.41
		Elevation:	101.39' above sea level

Maps Provided:

2013
1992, 1996, 1997
1983
1954, 1955

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Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2013 Source Sheets



Paia

7.5-minute, 24000



Maalaea

7.5-minute, 24000



Puu O Kali

7.5-minute, 24000



Wailuku

7.5-minute, 24000

1992, 1996, 1997 Source Sheets



Puu O Kali

7.5-minute, 24000
Aerial Photo Revised 1992



Maalaea

7.5-minute, 24000
Aerial Photo Revised 1996



Paia

7.5-minute, 24000
Aerial Photo Revised 1997



Wailuku

7.5-minute, 24000
Aerial Photo Revised 1997

1983 Source Sheets



Puu O Kali

7.5-minute, 24000
Aerial Photo Revised 1976
Edited 1983



Paia

7.5-minute, 24000
Aerial Photo Revised 1977
Edited 1983



Maalaea

7.5-minute, 24000
Aerial Photo Revised 1977
Edited 1983



Wailuku

7.5-minute, 24000
Aerial Photo Revised 1977
Edited 1983

1954, 1955 Source Sheets



Paia

7.5-minute, 24000
Aerial Photo Revised 1950



Puu O Kali

7.5-minute, 24000
Aerial Photo Revised 1950



Maalaea

7.5-minute, 24000
Aerial Photo Revised 1950



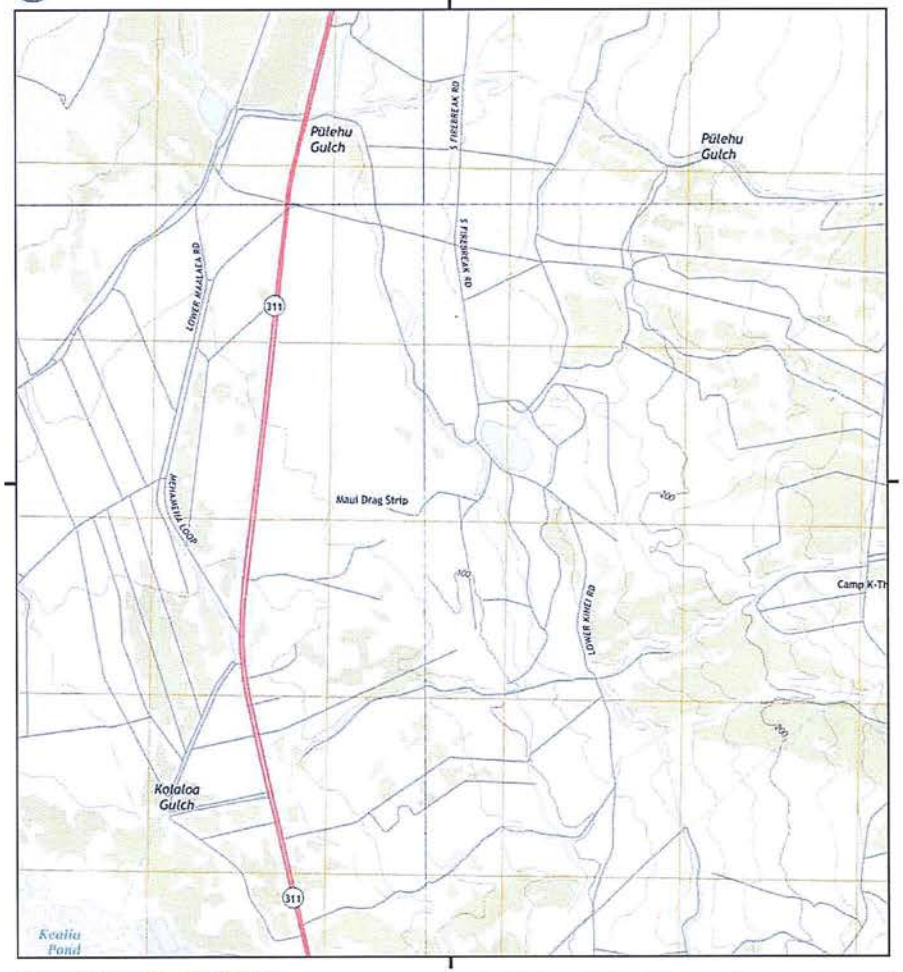
Wailuku

7.5-minute, 24000
Aerial Photo Revised 1950

EDR

Historical Topo Map

2013



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Puu O Kali, 2013, 7.5-minute
NE, Paia, 2013, 7.5-minute
SW, Maalaea, 2013, 7.5-minute
NW, Wailuku, 2013, 7.5-minute

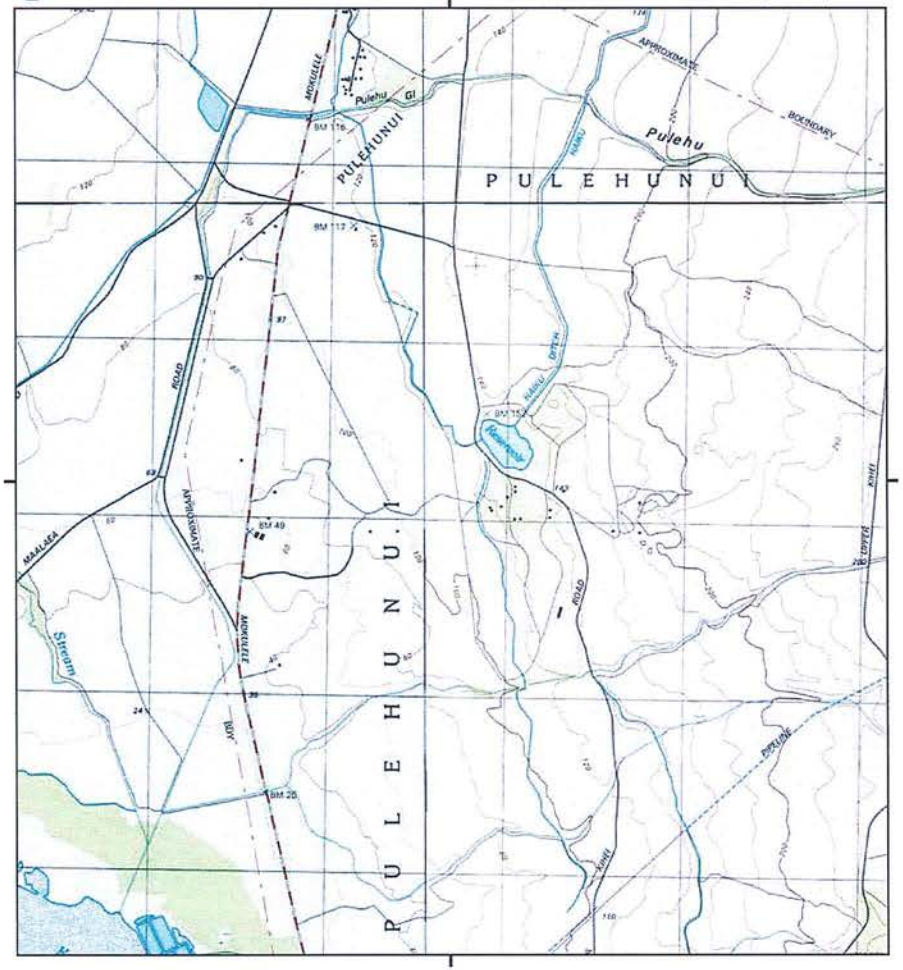
SITE NAME: Fields 815, 819, 914, 915, and 916
ADDRESS: Not Reported
Kihei, HI 96753
CLIENT: Enviro Srvcs. and Trng. Center

N

EDR

Historical Topo Map

1992, 1996, 1997



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

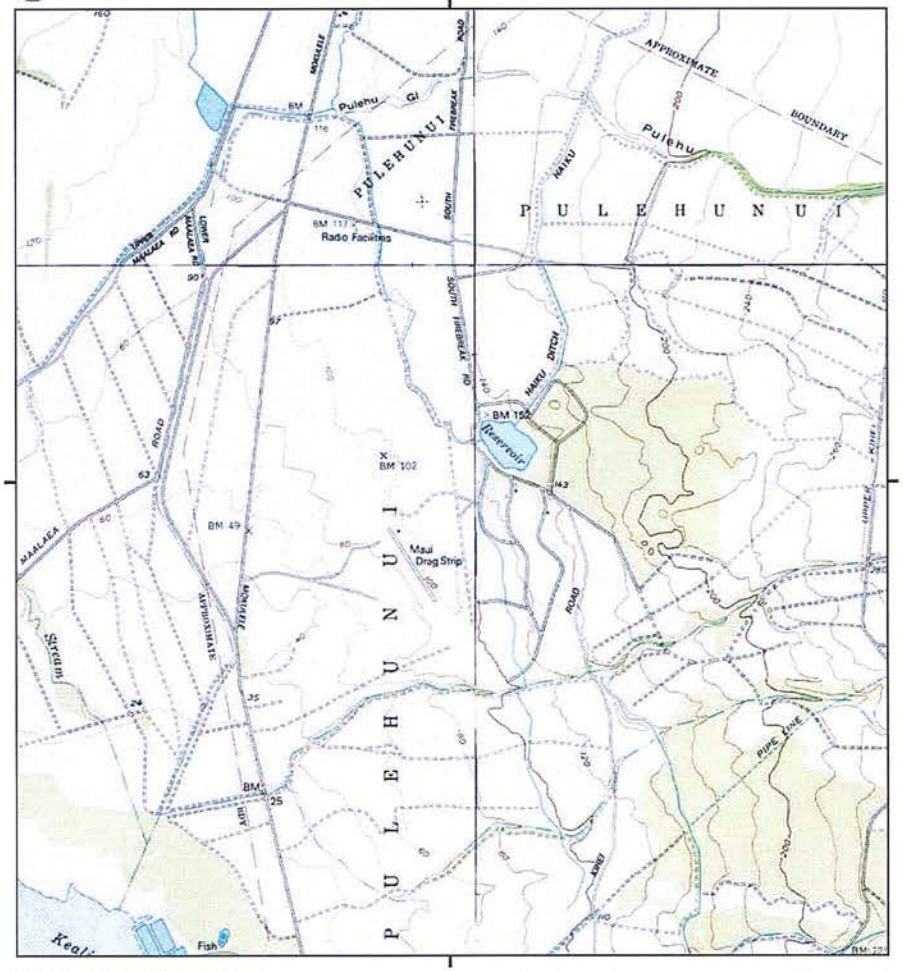
TP, Puu O Kali, 1992, 7.5-minute
NE, Paia, 1997, 7.5-minute
SW, Maalaea, 1996, 7.5-minute
NW, Wailuku, 1997, 7.5-minute

SITE NAME: Fields 815, 819, 914, 915, and 916
ADDRESS: Not Reported
Kihei, HI 96753
CLIENT: Enviro Srvcs. and Trng. Center

N

Historical Topo Map

1983



0 Miles 0.25 0.5 1 1.5

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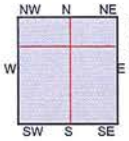
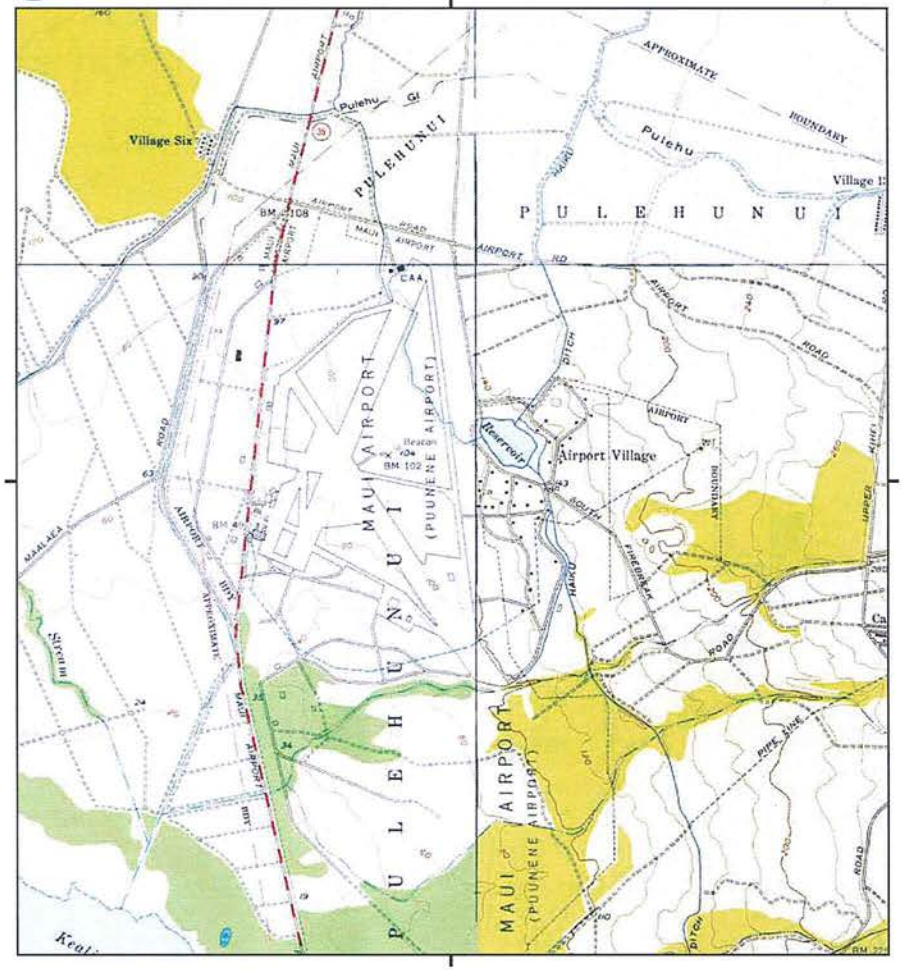


TP, Puu O Kali, 1983, 7.5-minute
NE, Paia, 1983, 7.5-minute
SW, Maalaea, 1983, 7.5-minute
NW, Wailuku, 1983, 7.5-minute

SITE NAME: Fields 815, 819, 914, 915, and 916
ADDRESS: Not Reported
Kihei, HI 96753
CLIENT: Enviro Srvcs. and Trng. Center

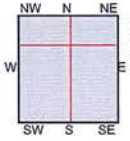
Historical Topo Map

1954, 1955



0 Miles 0.25 0.5 1 1.5

This report includes information from the following map sheet(s).



TP, Puu O Kali, 1954, 7.5-minute
NE, Paia, 1954, 7.5-minute
SW, Maalaea, 1954, 7.5-minute
NW, Wailuku, 1955, 7.5-minute

SITE NAME: Fields 815, 819, 914, 915, and 916
ADDRESS: Not Reported
Kihei, HI 96753
CLIENT: Enviro Srvcs. and Trng. Center

Field 411
Not Reported
Kihei, HI 96753

Inquiry Number: 4748534.14
October 07, 2016

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EDR Historical Topo Map Report

10/07/16

Site Name:	Client Name:
Field 411	Enviro Srvcs. and Trng. Center
Not Reported	505 Ward Avenue
Kihei, HI 96753	Honolulu, HI 96814
EDR Inquiry # 4748534.14	Contact: Sharla Nakashima

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Search Results:		*Coordinates:*	
P.O.#	NA	**Latitude:**	20.802742 20° 48' 10" North
Project:	16-1018	**Longitude:**	-156.403207 -156° 24' 12" West
		UTM Zone:	Zone 4 North
		UTM X Meters:	770304.28
		UTM Y Meters:	2302493.31
		Elevation:	604.20' above sea level

Maps Provided:

2013
1992
1983
1954

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Topo Sheet Key

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2013 Source Sheets



Puu O Kali

7.5-minute, 24000

1992 Source Sheets



Puu O Kali

7.5-minute, 24000
Aerial Photo Revised 1992

1983 Source Sheets



Puu O Kali

7.5-minute, 24000
Aerial Photo Revised 1976
Edited 1983

1954 Source Sheets



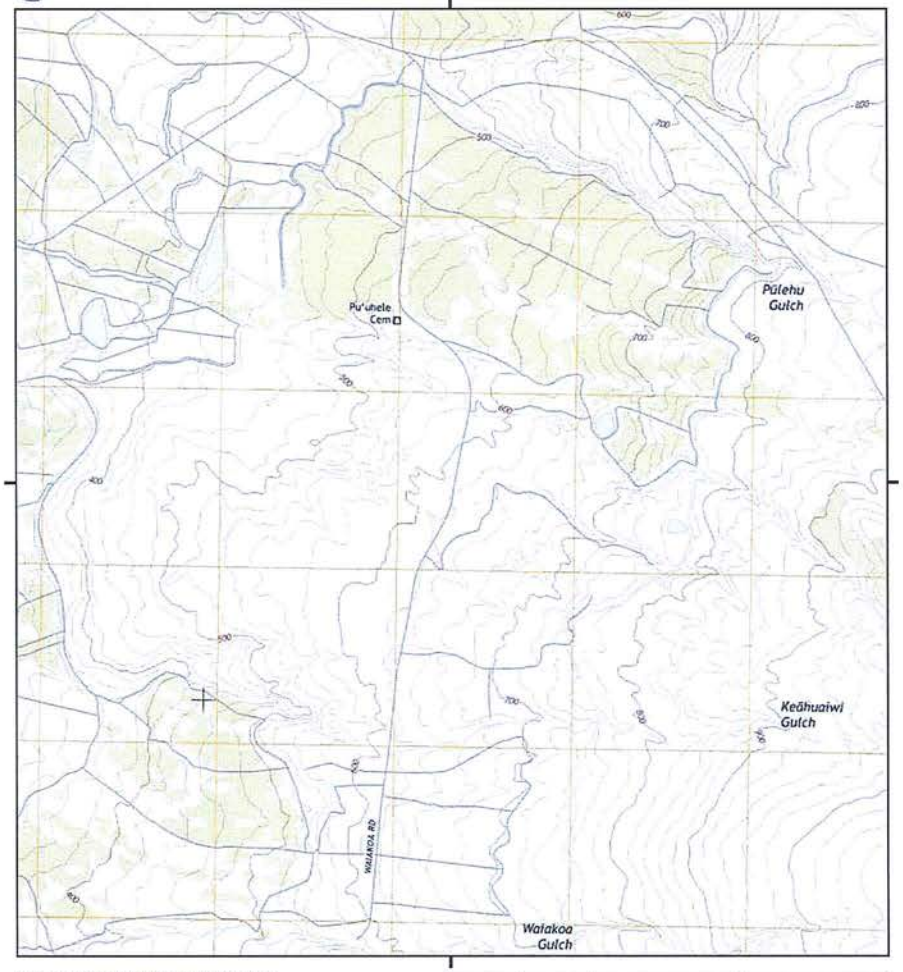
Puu O Kali

7.5-minute, 24000
Aerial Photo Revised 1950

EDR

Historical Topo Map

2013



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

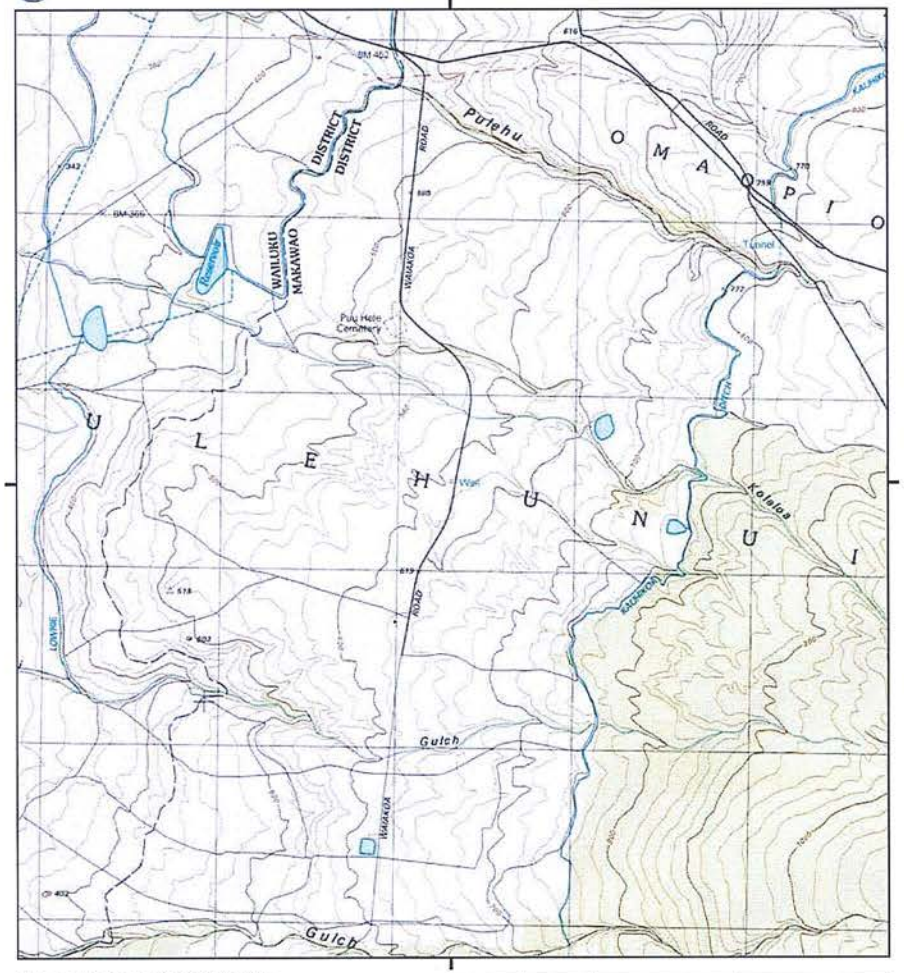
TP, Puu O Kali, 2013, 7.5-minute

SITE NAME: Field 411
ADDRESS: Not Reported
Kihei, HI 96753
CLIENT: Enviro Srvcs. and Trng. Center

N

Historical Topo Map

1992



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

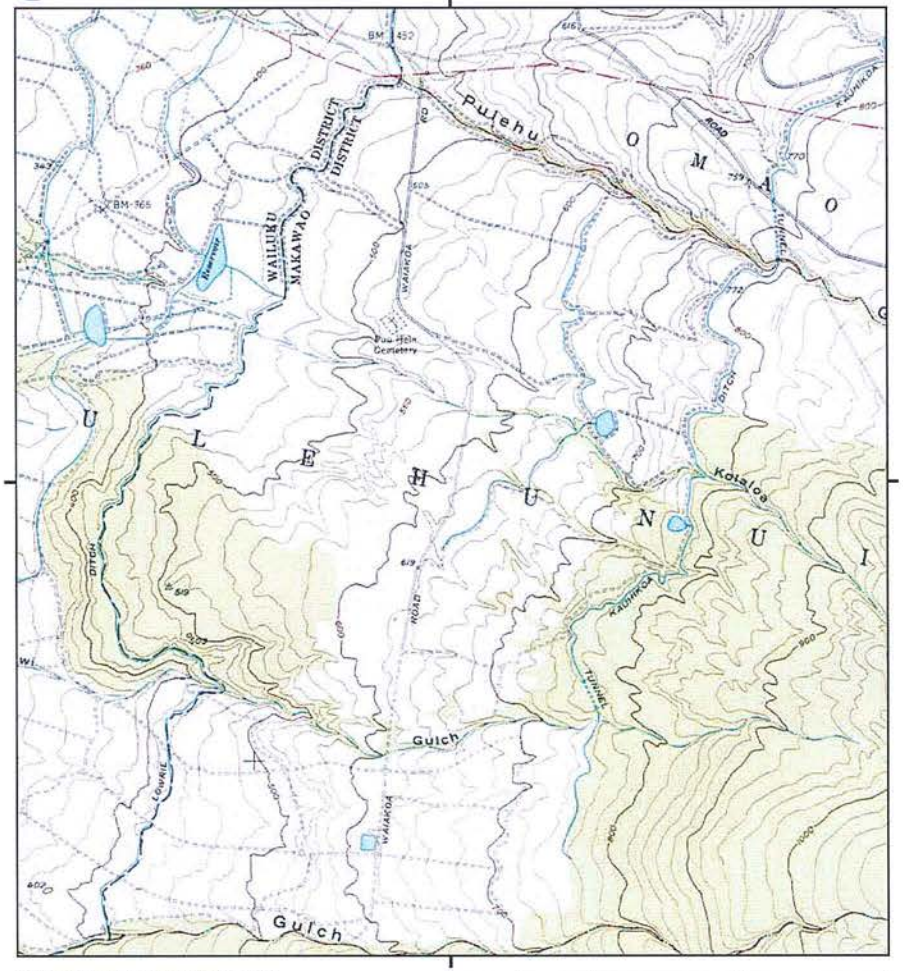
TP, Puu O Kali, 1992, 7.5-minute

SITE NAME: Field 411
ADDRESS: Not Reported
Kihei, HI 96753
CLIENT: Enviro Srvcs. and Trng. Center

N

Historical Topo Map

1983



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

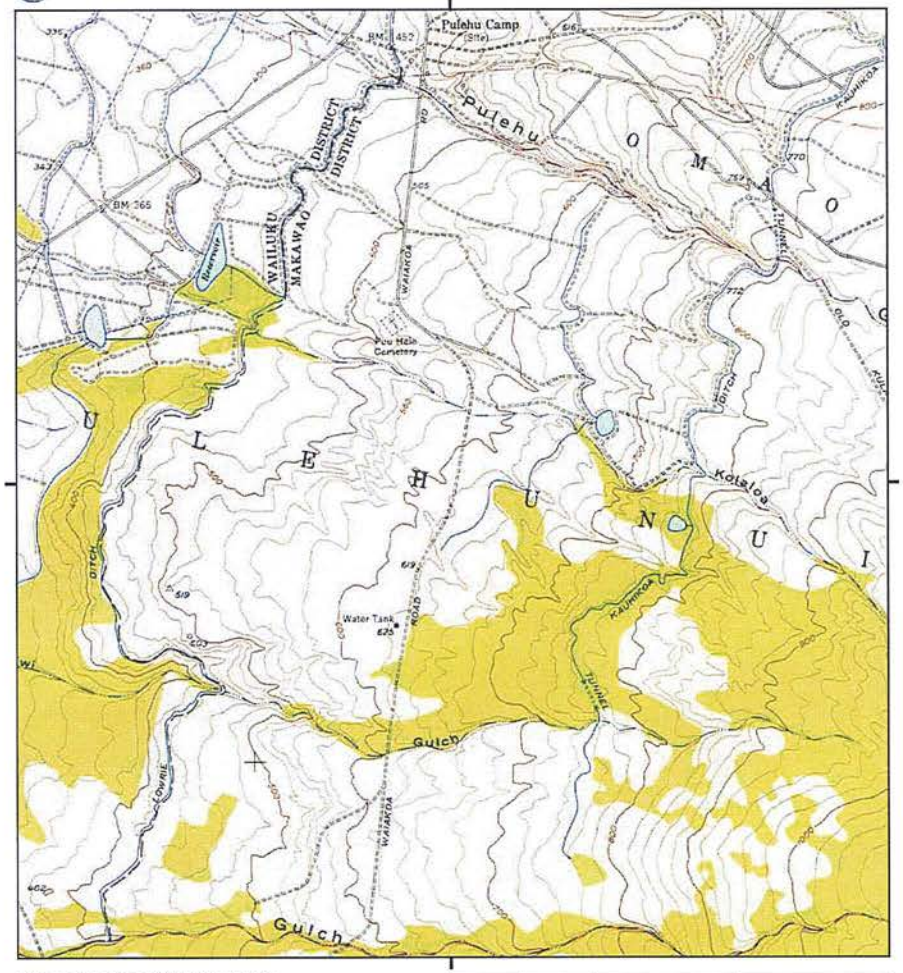
TP, Puu O Kali, 1983, 7.5-minute

SITE NAME: Field 411
ADDRESS: Not Reported
Kihei, HI 96753
CLIENT: Enviro Srvcs. and Trng. Center

N

Historical Topo Map

1954



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Puu O Kali, 1954, 7.5-minute

SITE NAME: Field 411
ADDRESS: Not Reported
Kihei, HI 96753
CLIENT: Enviro Srvcs. and Trng. Center

N

Fields 501/502 and 604
LANA ST
Kihei, HI 96753

Inquiry Number: 4748534.4
October 07, 2016

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with QuadMatch™

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Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

10/07/16

Site Name:	Client Name:
Fields 501/502 and 604	Enviro Srvcs. and Trng. Center
LANA ST	505 Ward Avenue
Kihei, HI 96753	Honolulu, HI 96814
EDR Inquiry # 4748534.4	Contact: Sharla Nakashima

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Search Results:		*Coordinates:*	
P.O.#	NA	**Latitude:**	20.87694 20° 52' 37" North
Project:	16-1018	**Longitude:**	-156.406109 -156° 24' 22" West
		UTM Zone:	Zone 4 North
		UTM X Meters:	769869.60
		UTM Y Meters:	2310706.31
		Elevation:	189.93' above sea level

Maps Provided:

2013
1997
1983
1954

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Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2013 Source Sheets



Paia

7.5-minute, 24000

1997 Source Sheets



Paia

7.5-minute, 24000
Aerial Photo Revised 1997

1983 Source Sheets



Paia

7.5-minute, 24000
Aerial Photo Revised 1977
Edited 1983

1954 Source Sheets

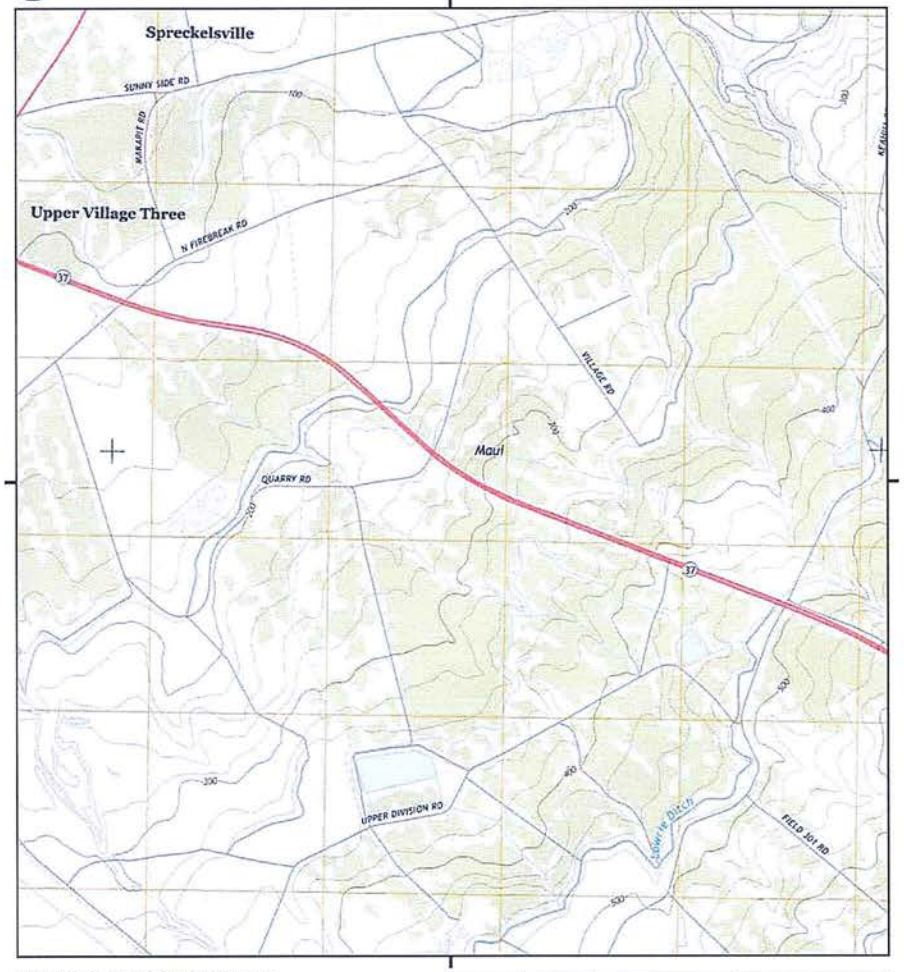


Paia

7.5-minute, 24000
Aerial Photo Revised 1950

Historical Topo Map

2013



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

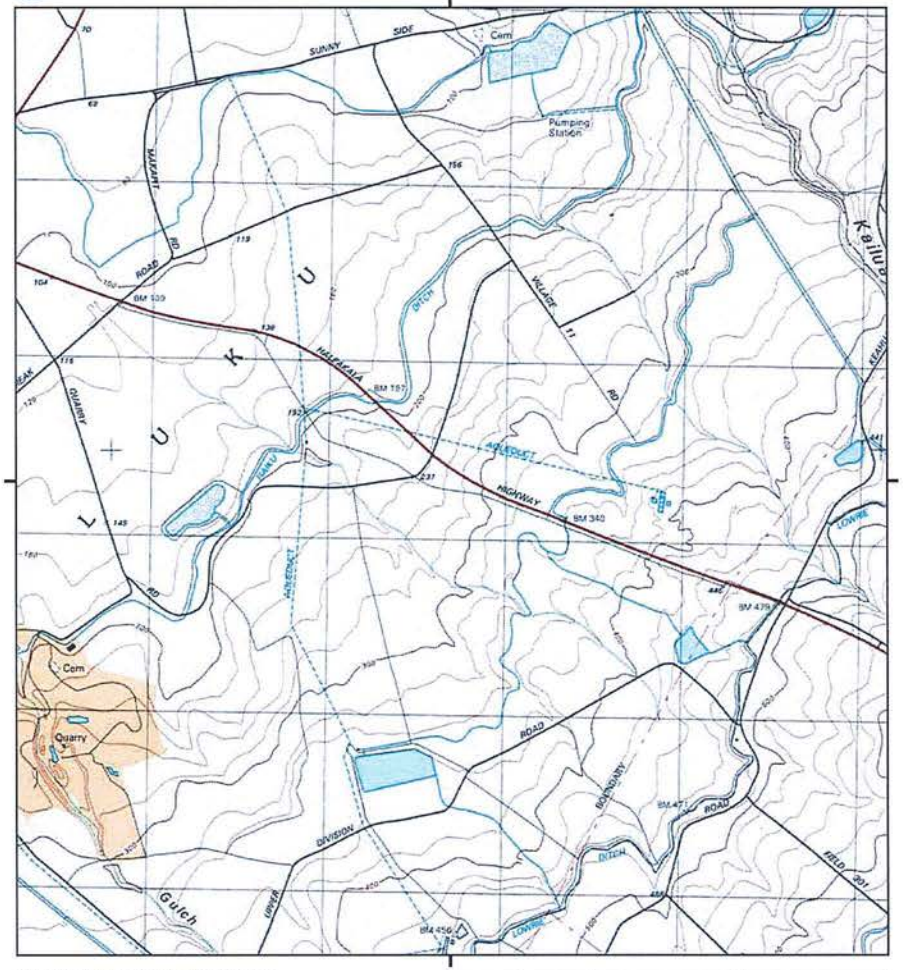
TP, Paia, 2013, 7.5-minute

SITE NAME: Fields 501/502 and 604
ADDRESS: LANA ST
Kihei, HI 96753
CLIENT: Enviro Srvcs. and Trng. Center

N

Historical Topo Map

1997



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Paia, 1997, 7.5-minute

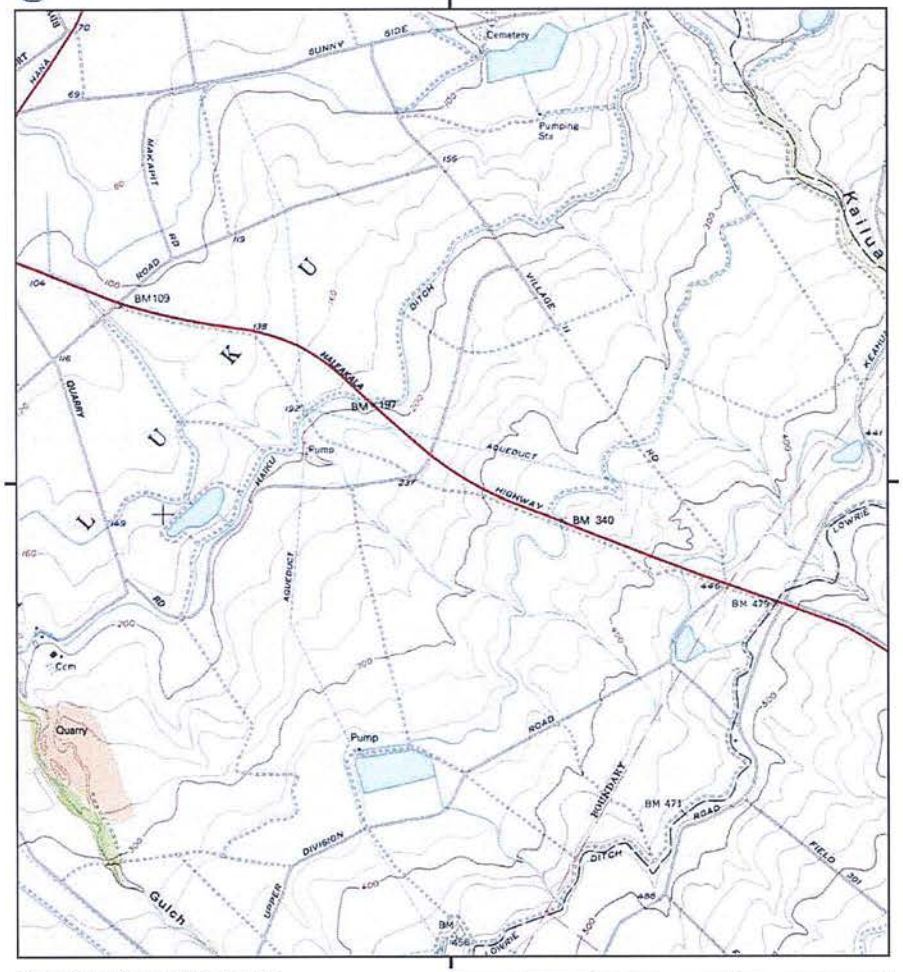
SITE NAME: Fields 501/502 and 604
ADDRESS: LANA ST
Kihei, HI 96753
CLIENT: Enviro Srvcs. and Trng. Center

N

EDR

Historical Topo Map

1983



This report includes information from the following map sheet(s).

TP, Paia, 1983, 7.5-minute

0 Miles 0.25 0.5 1 1.5

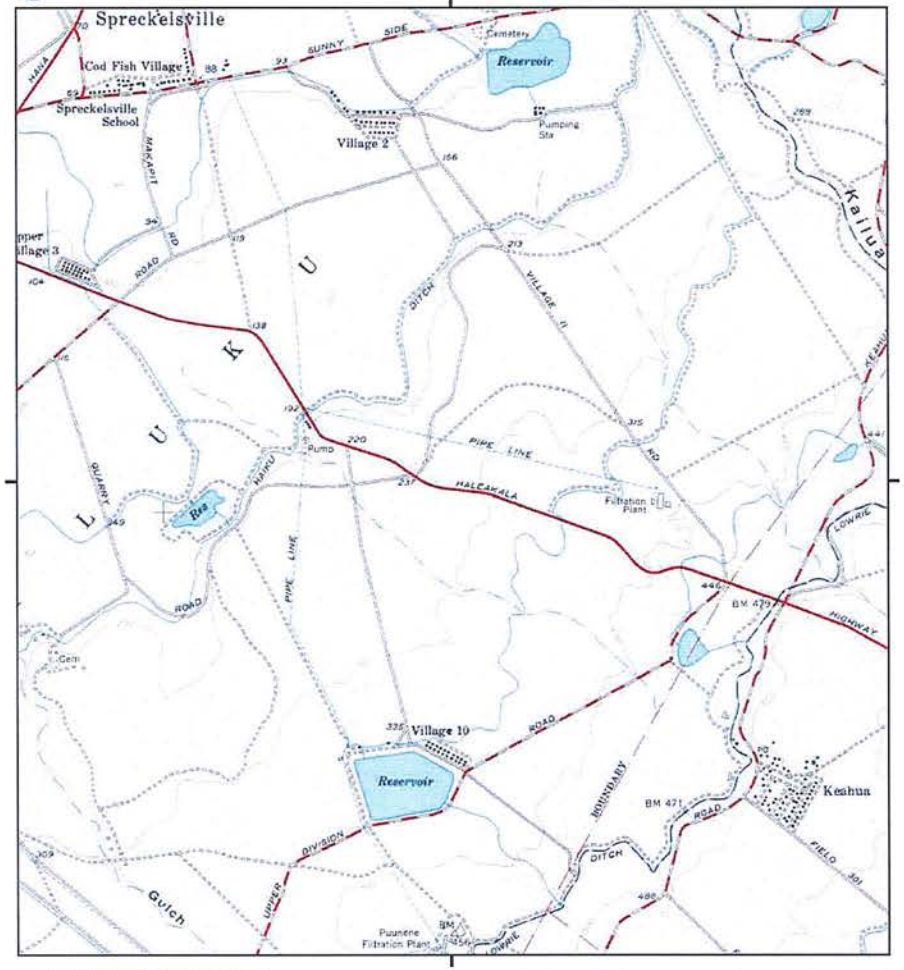
SITE NAME: Fields 501/502 and 604
ADDRESS: LANA ST
Kihei, HI 96753
CLIENT: Enviro Srvcs. and Trng. Center

4748534 - 4 page 7

EDR

Historical Topo Map

1954



This report includes information from the following map sheet(s).

TP, Paia, 1954, 7.5-minute

0 Miles 0.25 0.5 1 1.5

SITE NAME: Fields 501/502 and 604
ADDRESS: LANA ST
Kihei, HI 96753
CLIENT: Enviro Srvcs. and Trng. Center

4748534 - 4 page 8

Fields 815, 819, 914, 915, and 916
Not Reported
Kihei, HI 96753

Inquiry Number: 4748527.9
October 12, 2016

The EDR Aerial Photo Decade Package

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Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

10/12/16

Site Name:	Client Name:
Fields 815, 819, 914, 915, and Not Reported Kihei, HI 96753 EDR Inquiry # 4748527.9	Enviro Srvcs. and Trng. Center 505 Ward Avenue Honolulu, HI 96814 Contact: Sharla Nakashima

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Search Results:

Year	Scale	Details	Source
2000	1"=500'	Acquisition Date: November 08, 2000	USGS/DOQQ
1992	1"=500'	Flight Date: September 23, 1992	usgs
1976	1"=500'	Flight Date: December 20, 1976	USGS
1950	1"=500'	Flight Date: September 28, 1950	USGS

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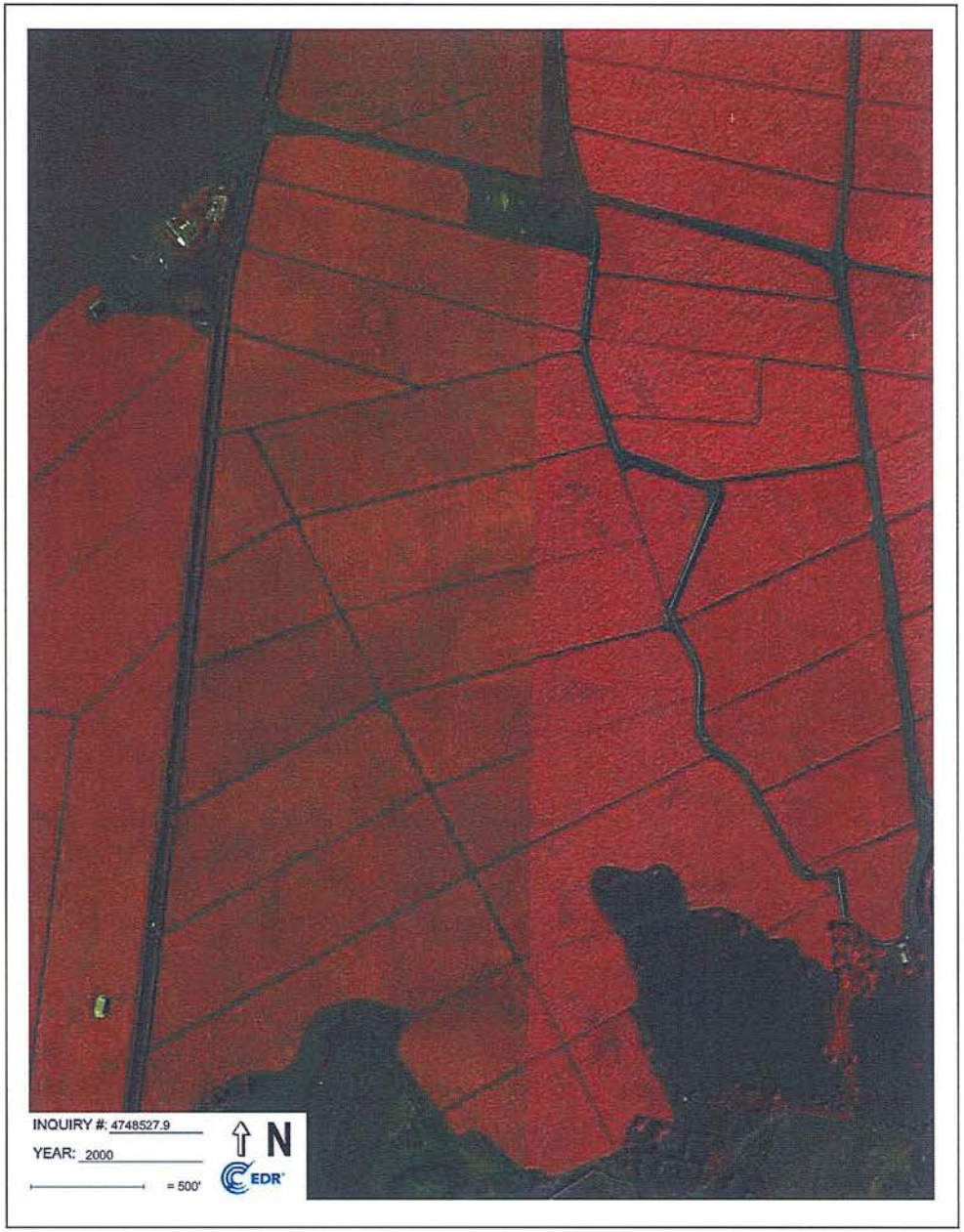
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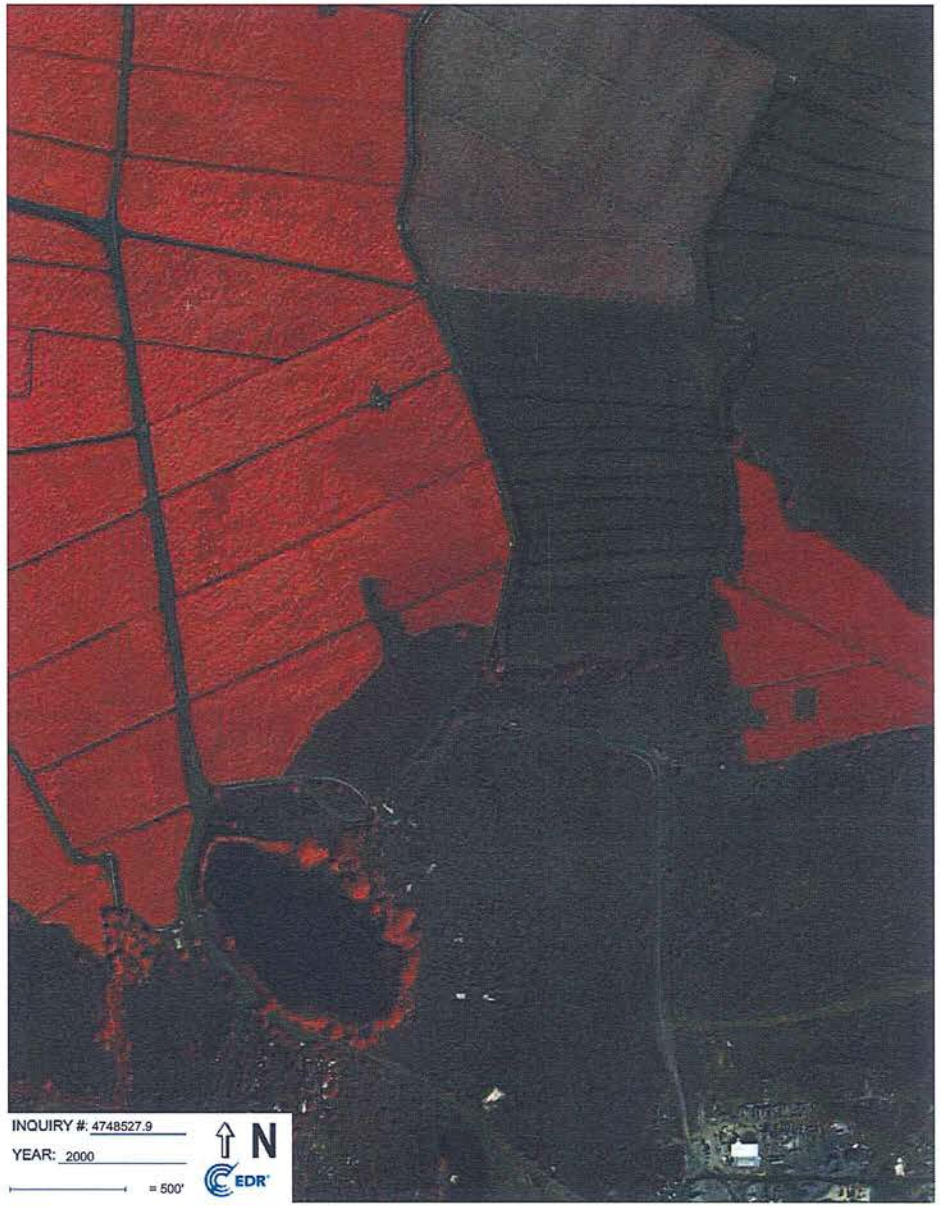
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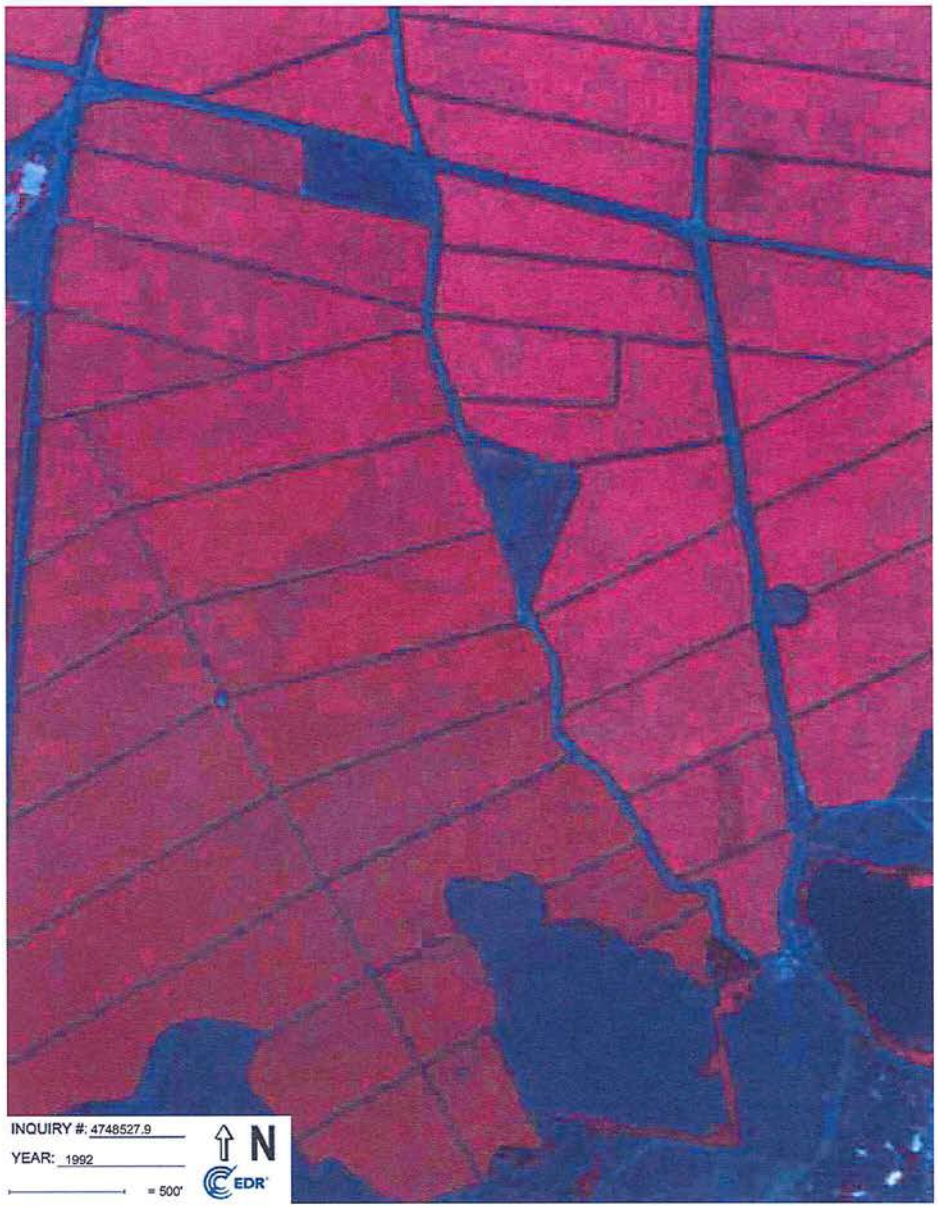
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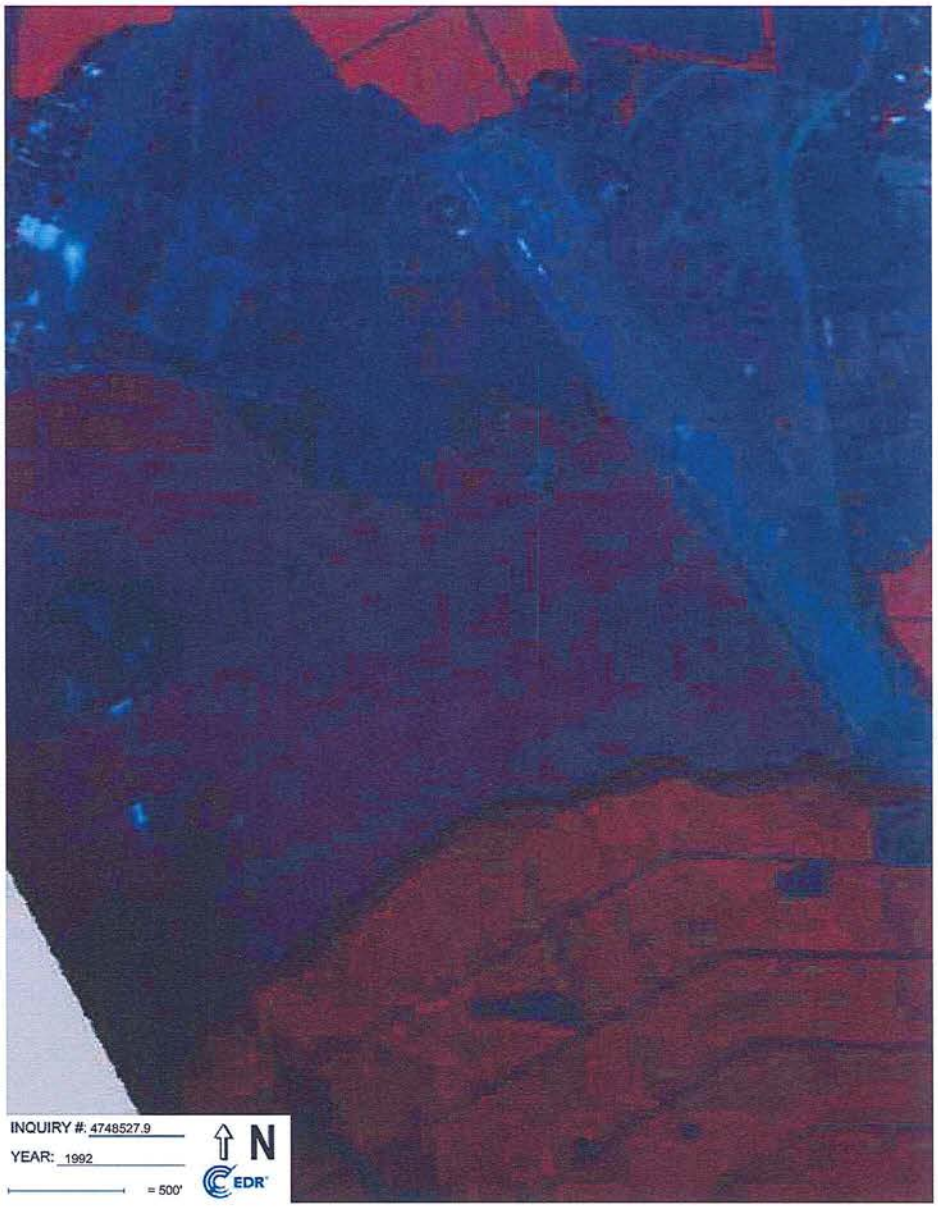
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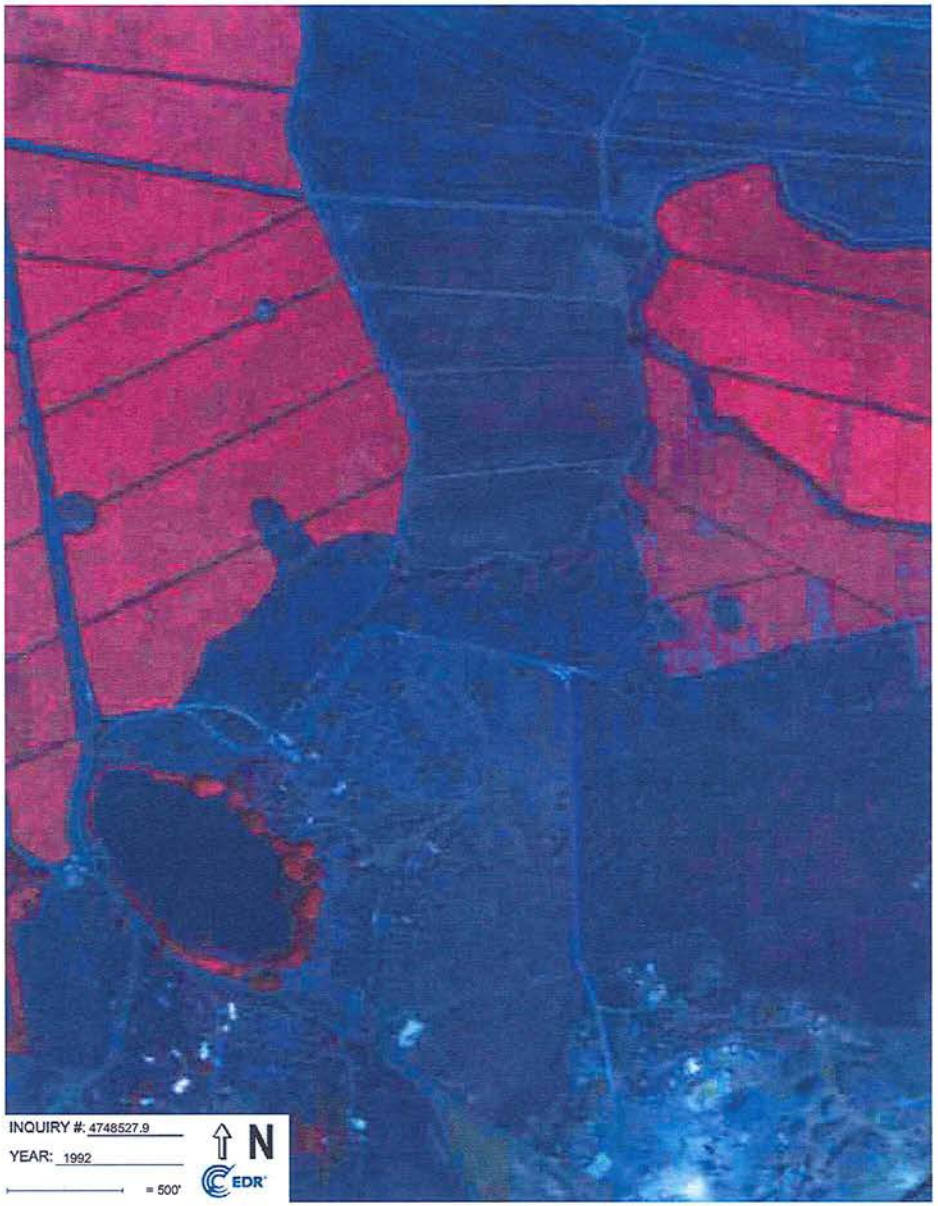
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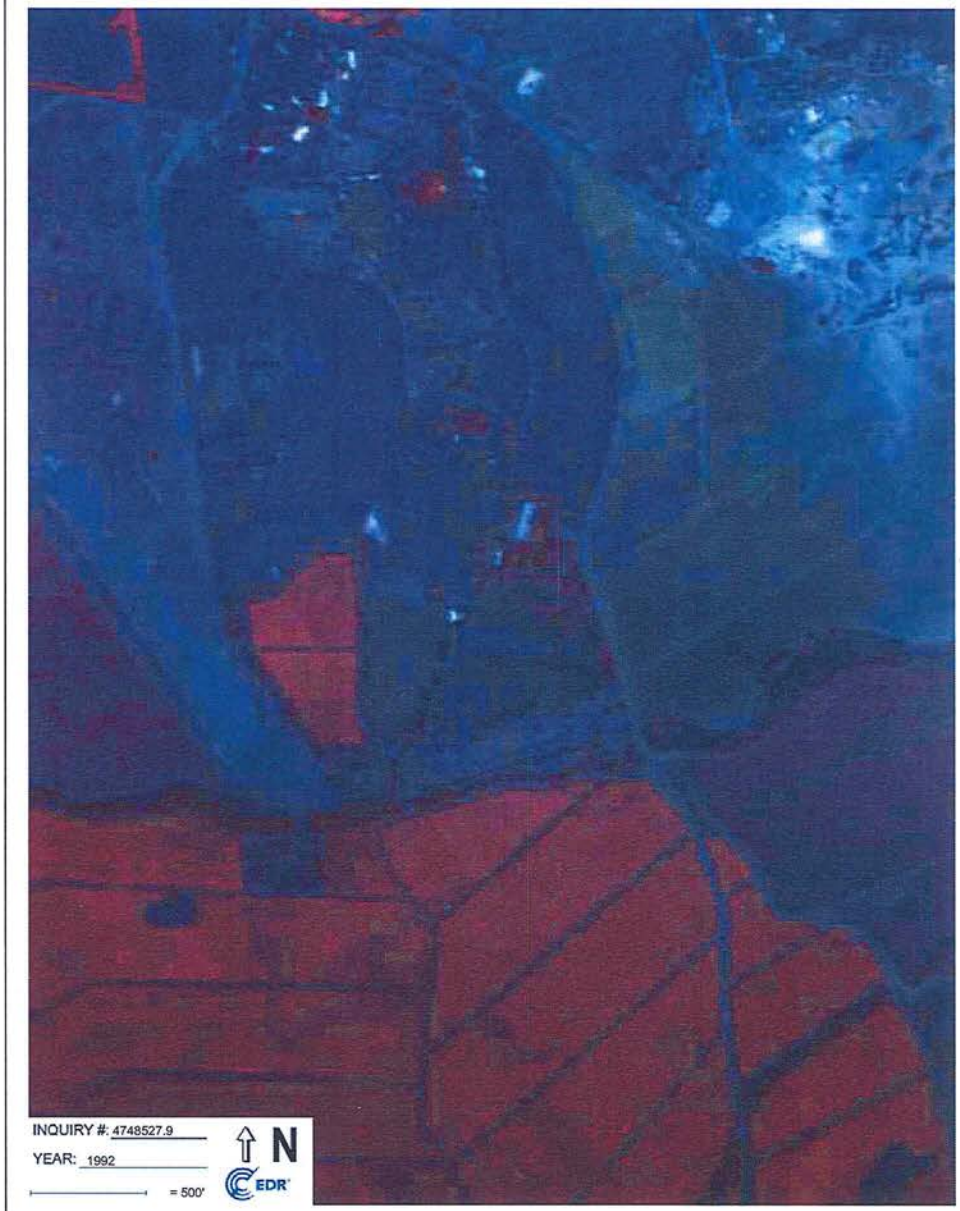
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YEAR: 1976
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EDR


INQUIRY #: 4748527.9
YEAR: 1976
= 500'
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EDR


INQUIRY #: 4748527.9
YEAR: 1976
= 500'
N
EDR


INQUIRY #: 4748527.9
YEAR: 1976
= 500'
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INQUIRY #: 4748527.9
YEAR: 1950
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EDR


INQUIRY #: 4748527.9
YEAR: 1950
= 500'
N
EDR


INQUIRY #: 4748527.9
YEAR: 1950
= 500'
N
EDR


INQUIRY #: 4748527.9
YEAR: 1950
= 500'
N
EDR

Field 411
Not Reported
Kihei, HI 96753

Inquiry Number: 4748534.20
October 10, 2016

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

10/10/16

Site Name:	Client Name:
Field 411	Enviro Srvcs. and Trng. Center
Not Reported	505 Ward Avenue
Kihei, HI 96753	Honolulu, HI 96814
EDR Inquiry # 4748534.20	Contact: Sharla Nakashima

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Search Results:

Year	Scale	Details	Source
2000	1"=500'	Acquisition Date: April 12, 2000	USGS/DOQQ
1992	1"=500'	Flight Date: September 30, 1992	USGS
1976	1"=500'	Flight Date: December 20, 1976	USGS
1950	1"=500'	Flight Date: September 28, 1950	USGS

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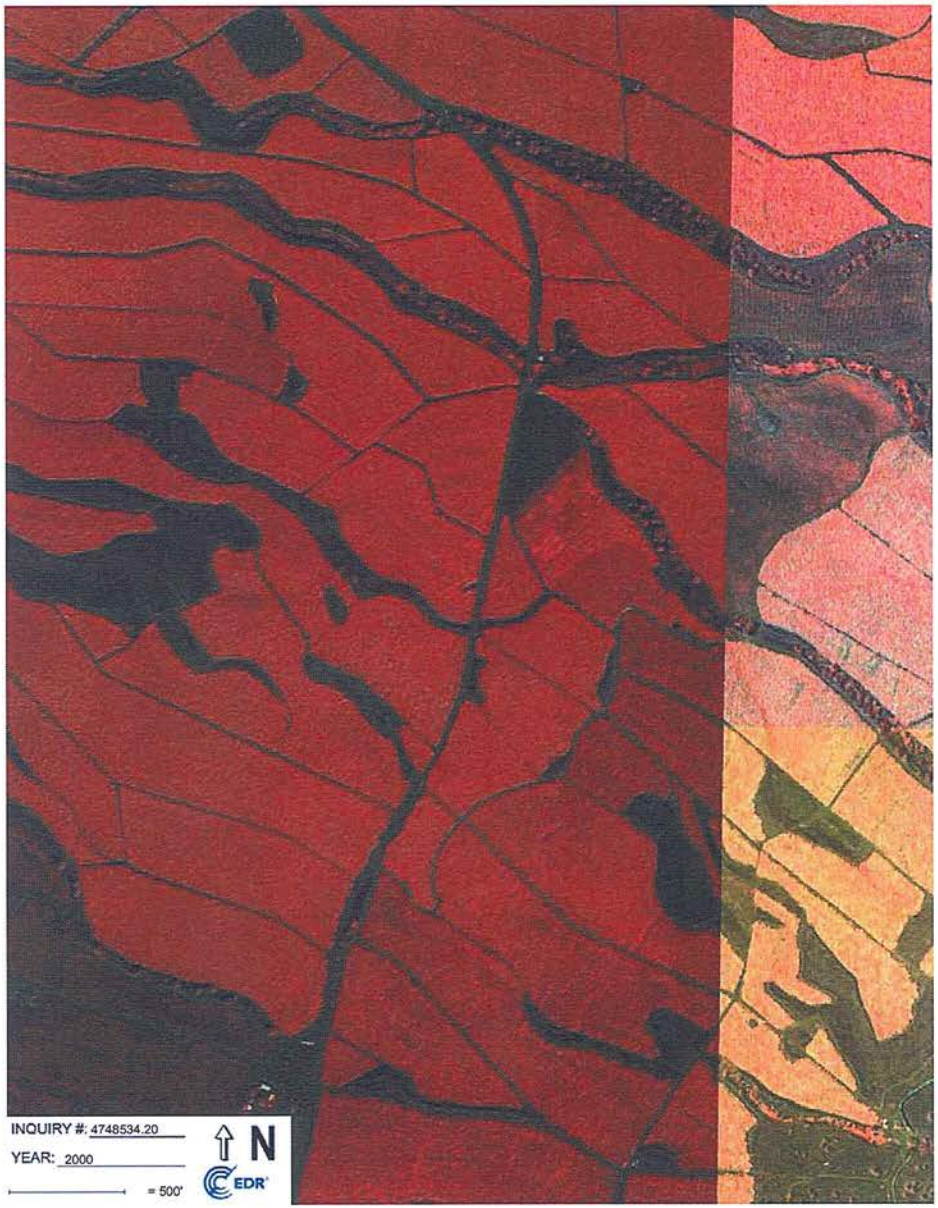
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YEAR: 1992
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INQUIRY #: 4748534.20
YEAR: 1976
= 500'
N
EDR


INQUIRY #: 4748534.20
YEAR: 1950
= 500'
N
EDR

Fields 501/502 and 604
LANA ST
Kihei, HI 96753

Inquiry Number: 4748534.10
October 10, 2016

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

10/10/16

Site Name:	Client Name:
Fields 501/502 and 604	Enviro Srvcs. and Trng. Center
LANA ST	505 Ward Avenue
Kihei, HI 96753	Honolulu, HI 96814
EDR Inquiry # 4748534.10	Contact: Sharla Nakashima

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Search Results:

Year	Scale	Details	Source
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1975	1"=500'	Flight Date: July 15, 1975	USGS
1950	1"=500'	Flight Date: September 28, 1950	USGS

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YEAR: 2000
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EDR


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YEAR: 2000
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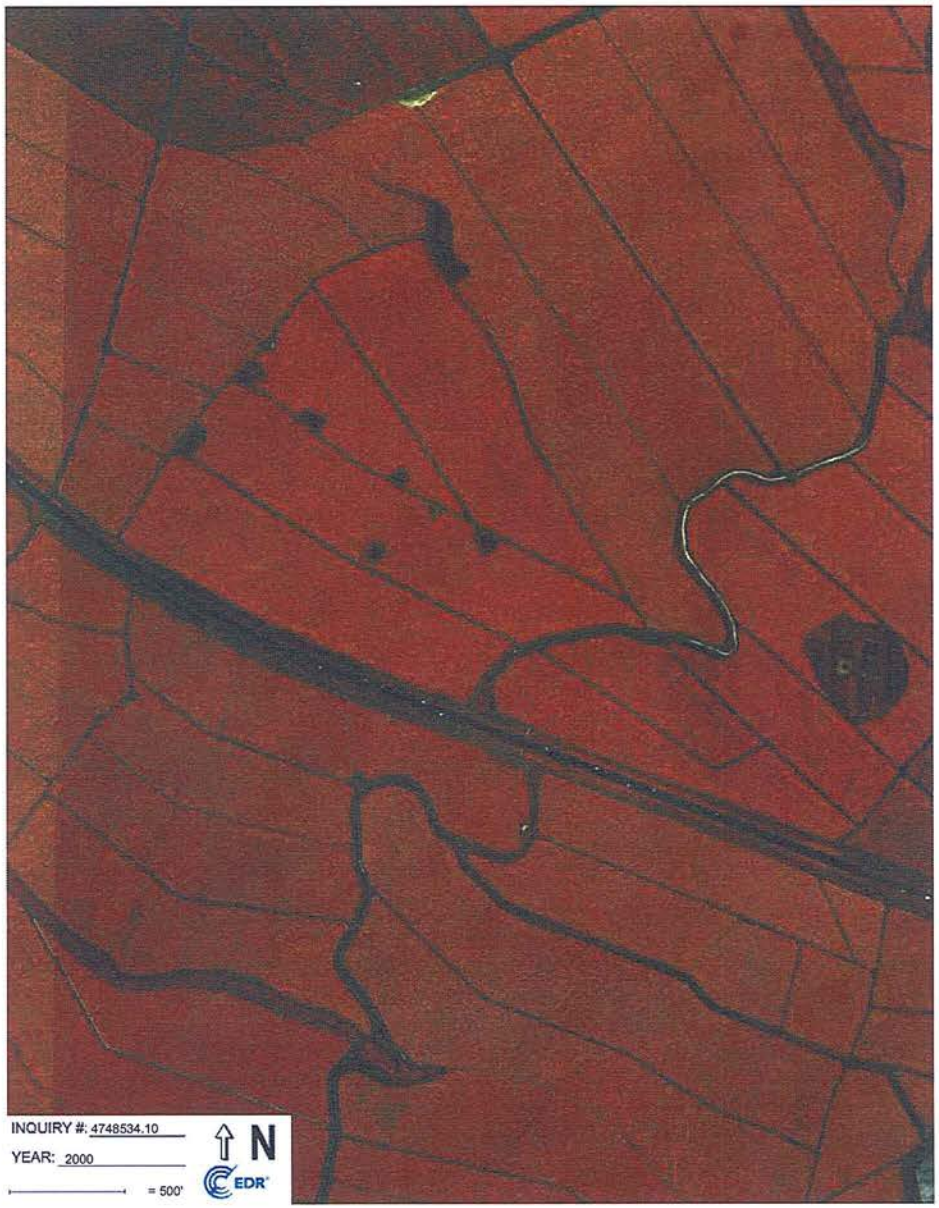
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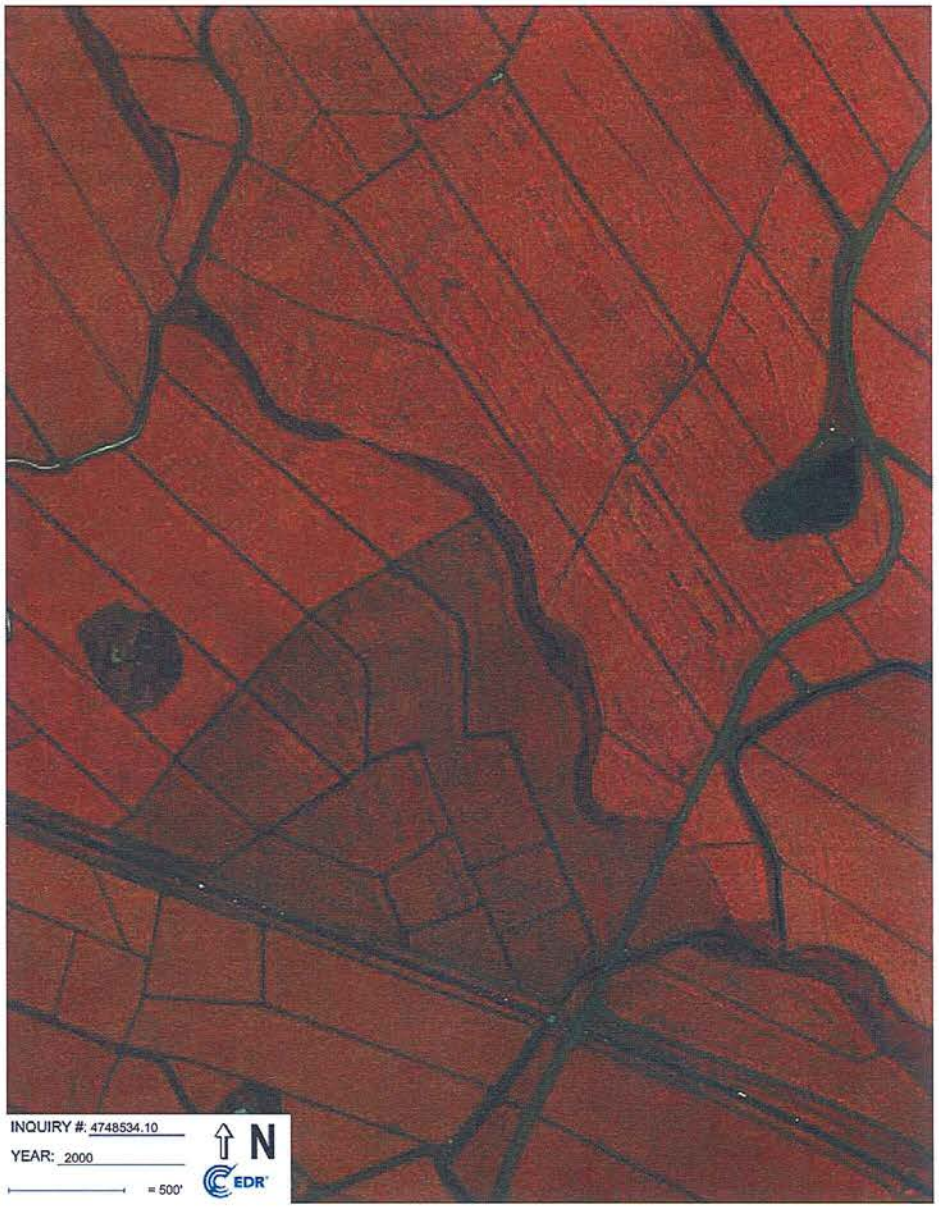
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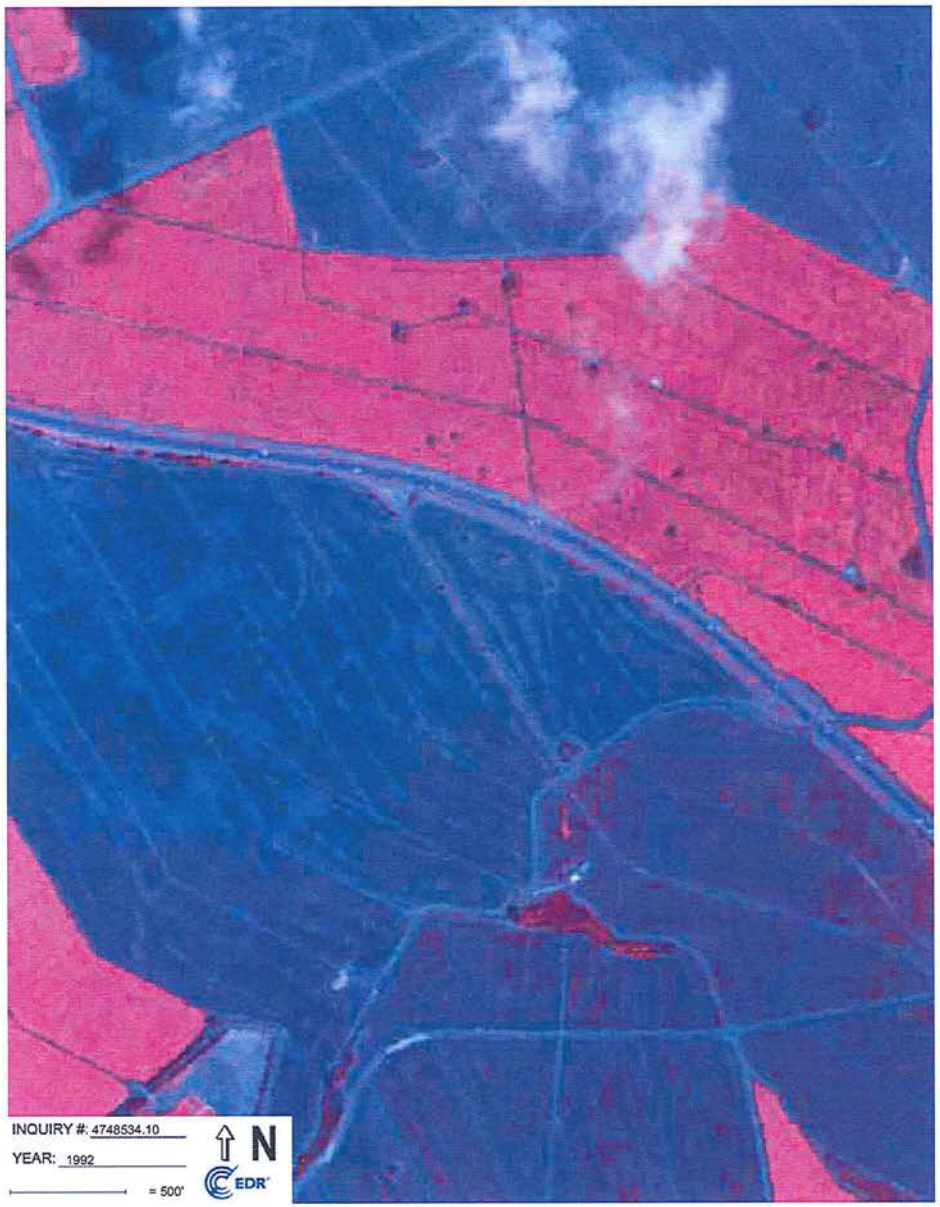
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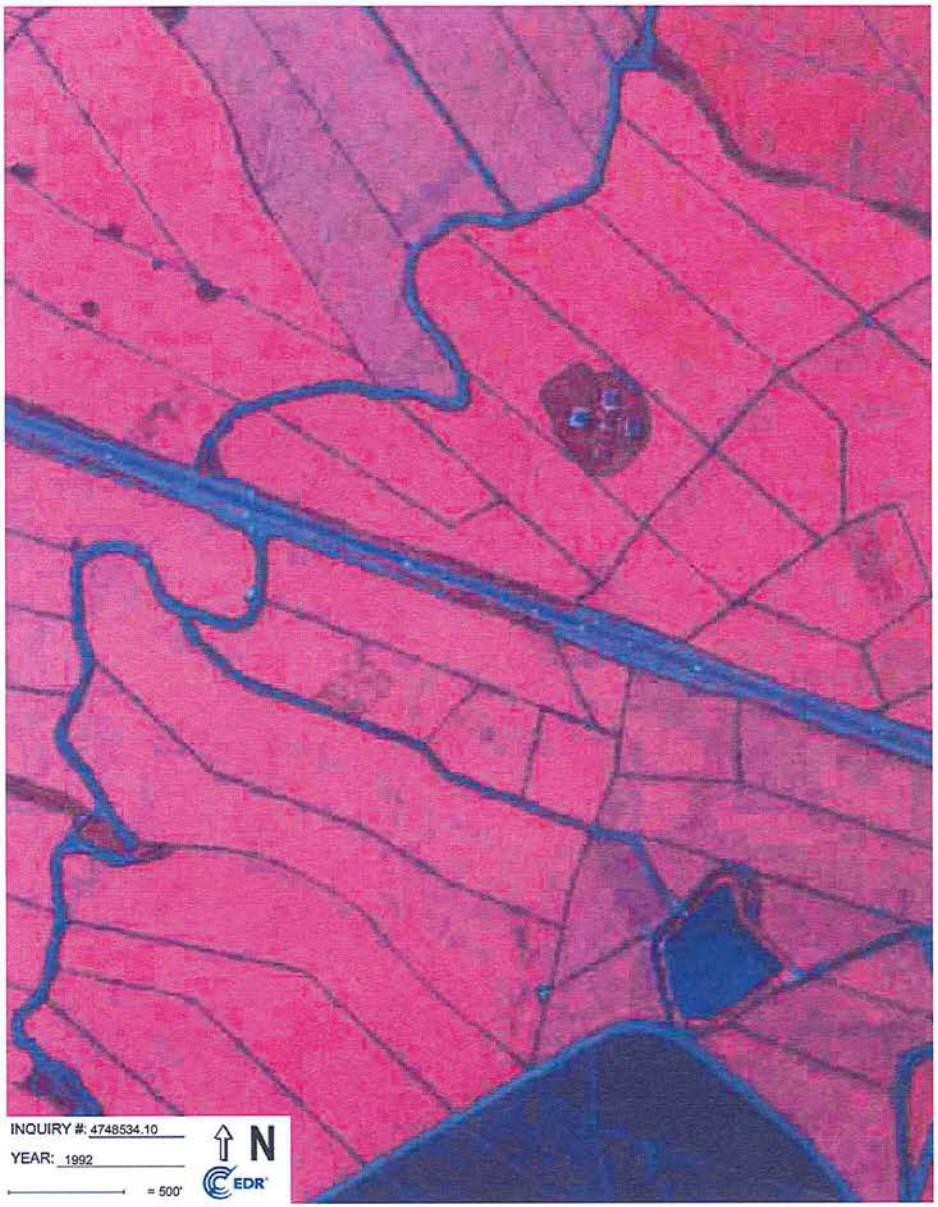
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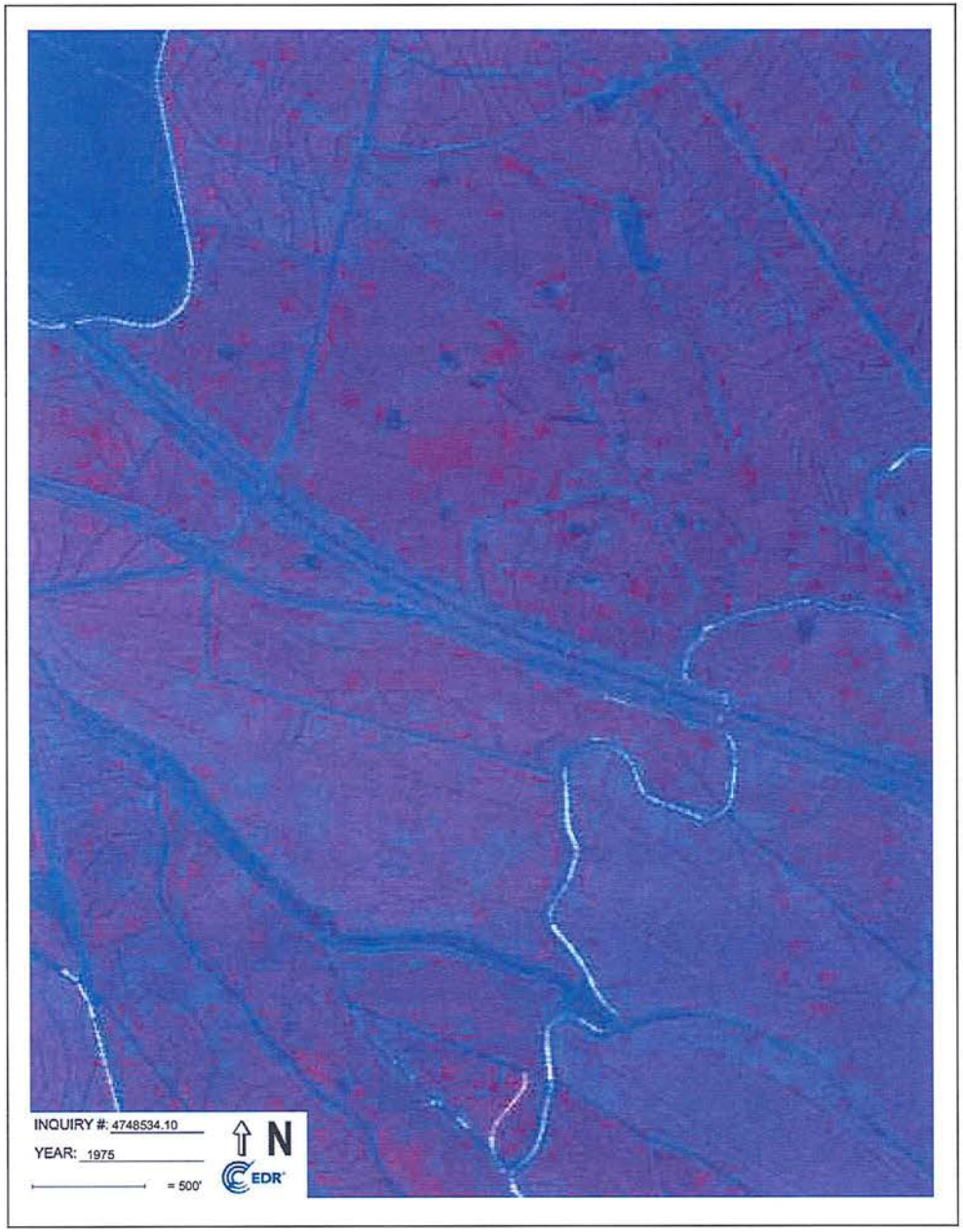
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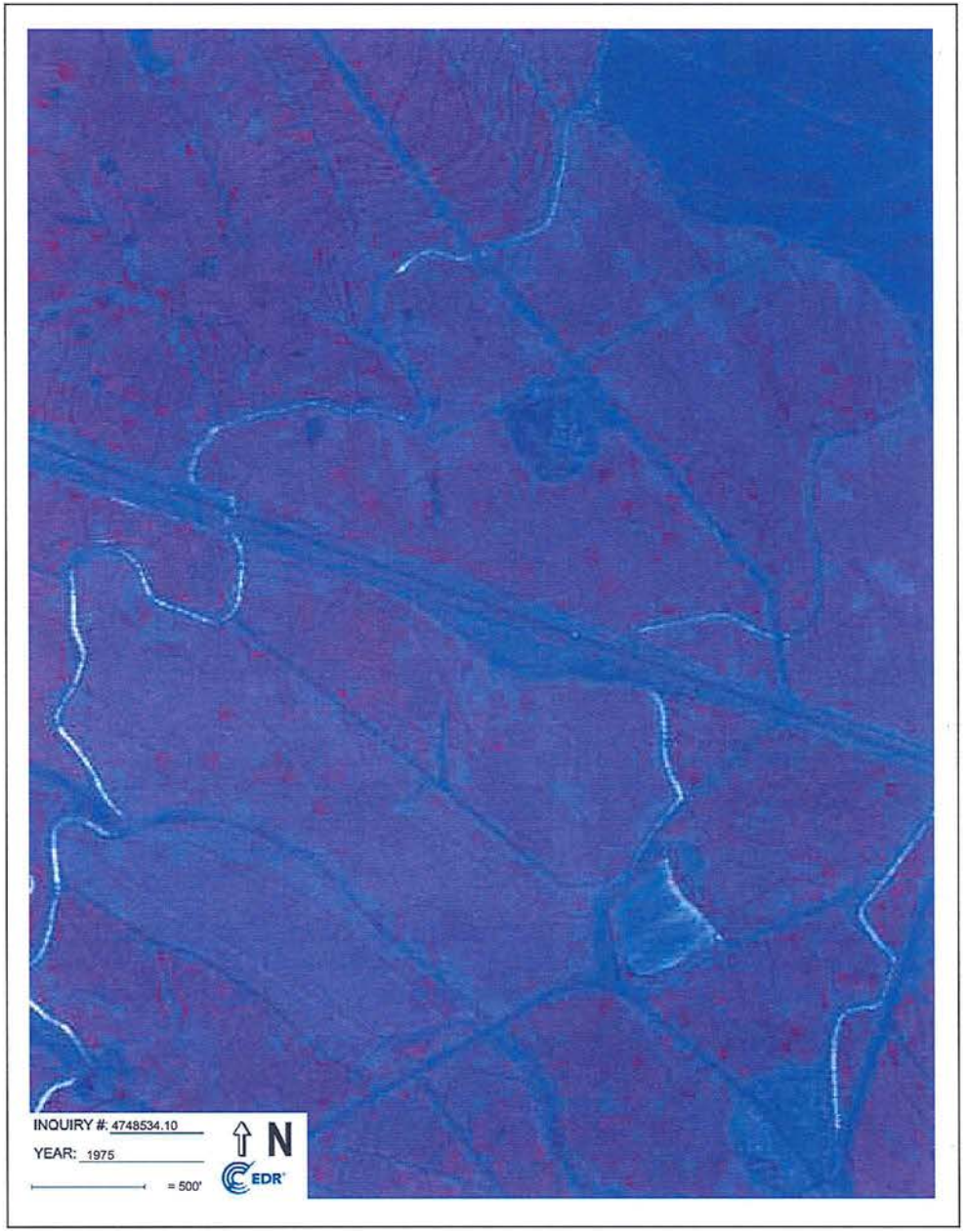
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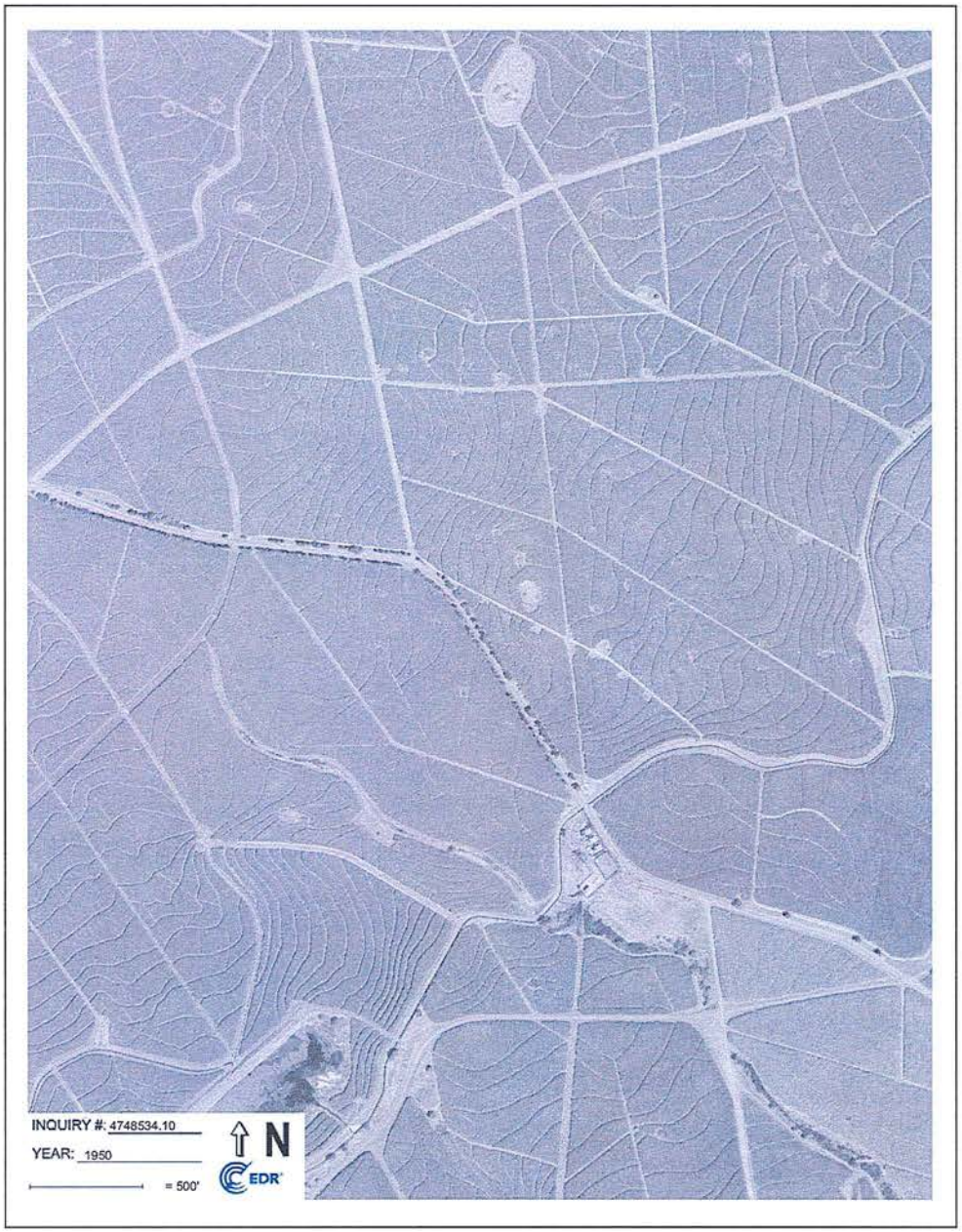
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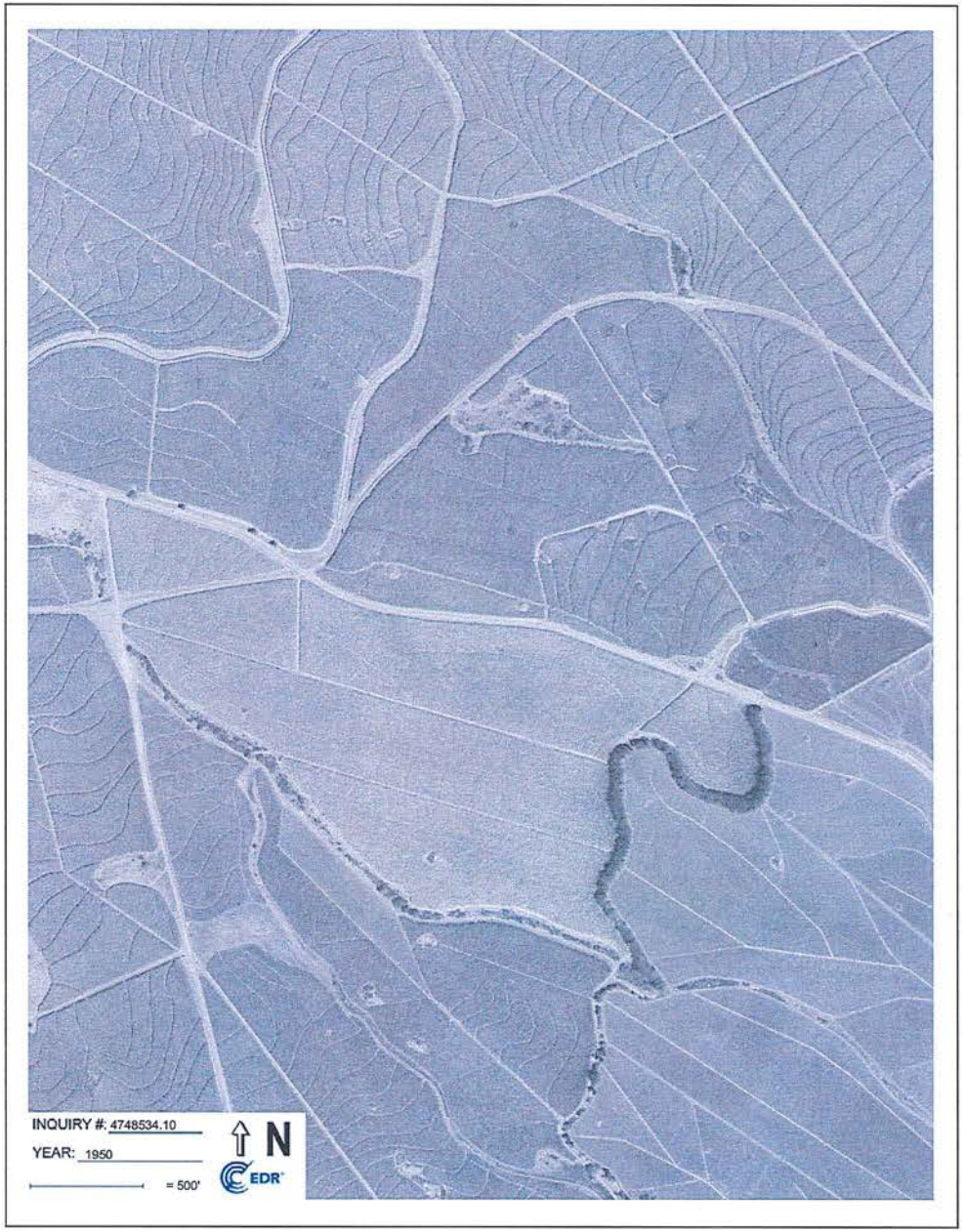
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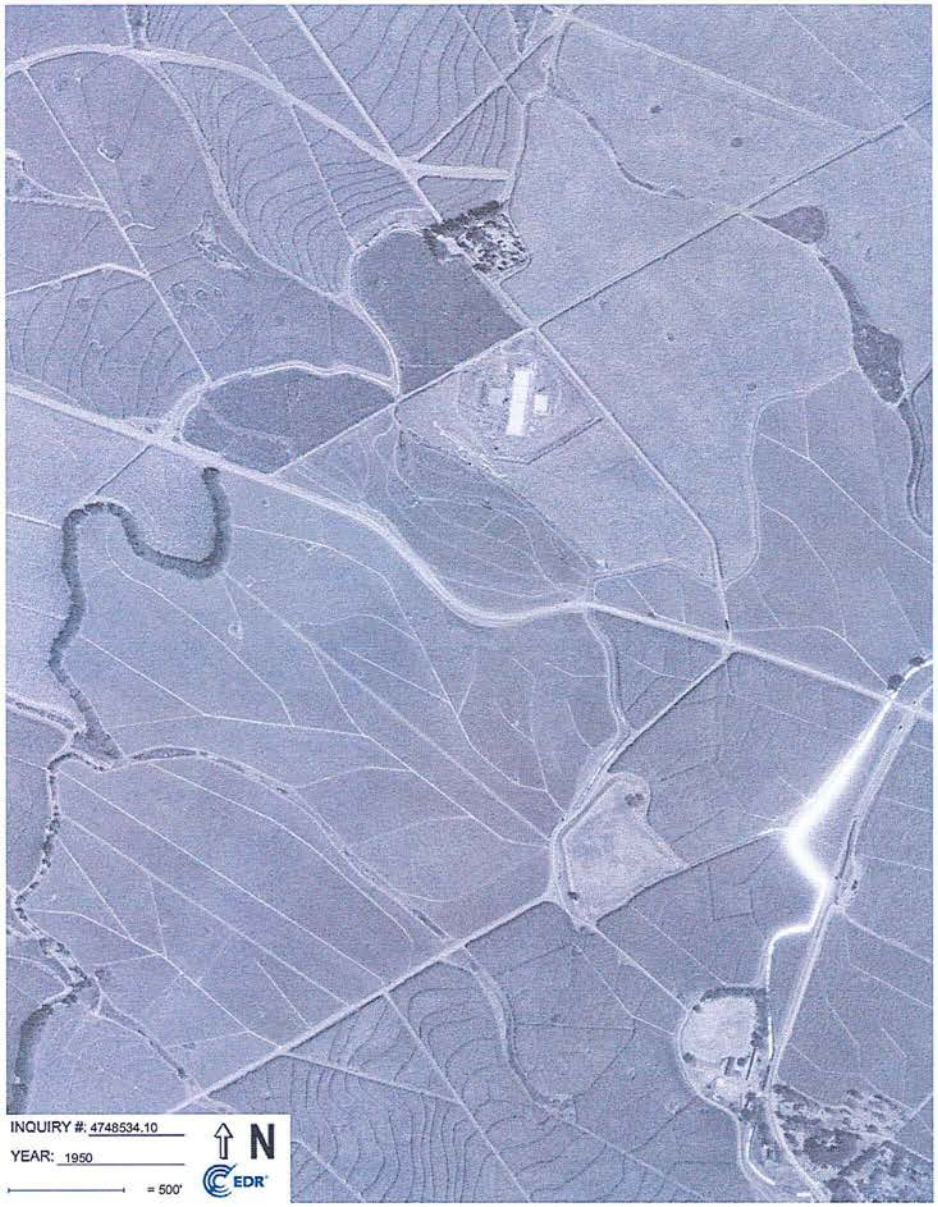

Fields 815, 819, 914, 915, and 916
Not Reported
Kihei, HI 96753

Inquiry Number: 4748527.6s
October 7, 2016

EDR Vapor Encroachment Screen

Prepared using EDR's Vapor Encroachment Worksheet

EDR® Environmental Data Resources Inc

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of the ASTM Standard Practice for Assessment of Vapor Encroachment into Structures on Property Involved in Real Estate Transactions (E 2600).

		Summary		
STANDARD ENVIRONMENTAL RECORDS	**Maximum Search Distance***	property	1/10	1/10 - 1/3
Federal NPL	0.333	0	0	0
Federal CERCLIS	0.333	0	0	0
Federal RCRA CORRACTS facilities list	0.333	0	0	0
Federal RCRA TSD facilities list	0.333	0	0	0
Federal RCRA generators list	property	0	-	-
Federal institutional controls / engineering controls registries	0.333	0	0	0
Federal ERNS list	property	0	-	-
State and tribal - equivalent NPL	not searched	-	-	-
State and tribal - equivalent CERCLIS	0.333	0	0	0
State and tribal landfill / solid waste disposal	0.333	0	0	0
State and tribal leaking storage tank lists	0.333	0	1	0
State and tribal registered storage tank lists	property	0	-	-
State and tribal institutional control / engineering control registries	property	0	-	-
State and tribal voluntary cleanup sites	0.333	0	0	0
State and tribal Brownfields sites	0.333	0	0	0
Other Standard Environmental Records	0.333	0	1	0
HISTORICAL USE RECORDS				
Former manufactured Gas Plants	0.333	0	0	0
Historical Gas Stations	0.125	0	0	0
Historical Dry Cleaners	0.125	0	0	0
Exclusive Recovered Govt. Archives	property	0	-	-

*Each category may include several separate databases, each having a different search distance. For each category, the table reports the maximum search distance applied. See the section 'Record Sources and Currency' for information on individual databases.

EXECUTIVE SUMMARY

TARGET PROPERTY INFORMATION

ADDRESS

FIELDS 815, 819, 914, 915, AND 916
NOT REPORTED
KIHEI, HI 96753

COORDINATES

Latitude (North):	20.818536 - 20° 49' 6.7323303"
Longitude (West):	156.45993 - 156° 27' 35.74951"
Elevation:	102 ft. above sea level

EXECUTIVE SUMMARY

PHYSICAL SETTING INFORMATION

Flood Zone:	Available
NWI Wetlands:	Available

AQUIFLOW®

Search Radius: 0.333 Mile.

No Aquiflow sites reported.

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name:	Alae
Soil Surface Texture:	cobbly sandy loam
Hydrologic Group:	Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.
Soil Drainage Class:	Excessively drained
Hydric Status:	Not hydric
Corrosion Potential - Uncoated Steel:	Moderate
Depth to Bedrock Min:	> 0 inches
Depth to Watertable Min:	> 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	cobbly sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14.11	Max: 7.3 Min: 6.6

EXECUTIVE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	7 inches	14 inches	cobbly sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14.11	Max: 7.8 Min: 7.4
3	14 inches	55 inches	gravelly coarse sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel. COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel.	Max: 141 Min: 14.11	Max: 8.4 Min: 7.9

Soil Map ID: 2

Soil Component Name: Alae

Soil Surface Texture: cobbly sandy loam

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	cobbly sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14.11	Max: 7.3 Min: 6.6

EXECUTIVE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	7 inches	14 inches	stratified sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14.11	Max: 7.8 Min: 7.4
3	14 inches	55 inches	gravelly coarse sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel. COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel.	Max: 141 Min: 14.11	Max: 8.4 Min: 7.9

Soil Map ID: 3

Soil Component Name: Ewa

Soil Surface Texture: silty clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

EXECUTIVE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	18 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel. COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel.	Max: 14 Min: 4.23	Max: 7.8 Min: 6.6
2	18 inches	59 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel. COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel.	Max: 14 Min: 4.23	Max: 7.8 Min: 6.6

Soil Map ID: 4

Soil Component Name: Waiakoa

Soil Surface Texture: very stony silty clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 84 inches

Depth to Watertable Min: > 0 inches

EXECUTIVE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	1 inches	very stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel. COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel.	Max: 14 Min: 4.23	Max: 7.3 Min: 6.6
2	1 inches	25 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel. COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel.	Max: 14 Min: 4.23	Max: 7.3 Min: 6.1
3	25 inches	33 inches	stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel. COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel.	Max: 42.34 Min: 4.23	Max: 8.4 Min: 7.4
4	33 inches	37 inches	bedrock	Not reported	Not reported	Max: 0.42 Min: 0.02	Max: Min:

Soil Map ID: 5

Soil Component Name: Pulehu

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

EXECUTIVE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	20 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4.23	Max: 7.3 Min: 6.6
2	20 inches	59 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141.14 Min: 14.11	Max: 7.8 Min: 6.6

Soil Map ID: 6

Soil Component Name: Pulehu

Soil Surface Texture: clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

EXECUTIVE SUMMARY

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	20 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4.23	Max: 7.3 Min: 6.6
2	20 inches	59 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141.14 Min: 14.11	Max: 7.8 Min: 6.6

Soil Map ID: 7

Soil Component Name: Pulehu

Soil Surface Texture: cobbly silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	20 inches	cobbly silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4.23	Max: 7.3 Min: 6.6

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	20 inches	59 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141.14 Min: 14.11	Max: 7.8 Min: 6.6

Soil Map ID: 8

Soil Component Name: Pulehu

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	20 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4.23	Max: 7.3 Min: 6.6
2	20 inches	59 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141.14 Min: 14.11	Max: 7.8 Min: 6.6

Soil Map ID: 9

Soil Component Name: Pulehu

Soil Surface Texture: cobbly silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	20 inches	cobbly silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4.23	Max: 7.3 Min: 6.6
2	20 inches	59 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141.14 Min: 14.11	Max: 7.8 Min: 6.6

Soil Map ID: 10

Soil Component Name: Waiakoa

Soil Surface Texture: extremely stony silty clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

EXECUTIVE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 71 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	0 inches	extremely stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4.23	Max: 7.3 Min: 6.6
2	0 inches	20 inches	extremely stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4.23	Max: 7.3 Min: 6.1
3	20 inches	27 inches	stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42.34 Min: 4.23	Max: 8.4 Min: 7.4
4	27 inches	31 inches	bedrock	Not reported	Not reported	Max: 0.42 Min: 0.02	Max: Min:

Soil Map ID: 11

Soil Component Name: Ewa

Soil Surface Texture: cobbly silty clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

EXECUTIVE SUMMARY

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	18 inches	cobbly silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4.23	Max: 7.8 Min: 6.6
2	18 inches	59 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4.23	Max: 7.8 Min: 6.6

Soil Map ID: 12

Soil Component Name: Ewa

Soil Surface Texture: cobbly silty clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	18 inches	cobbly silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4.23	Max: 7.8 Min: 6.6

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	18 inches	59 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4.23	Max: 7.8 Min: 6.6

Soil Map ID: 13

Soil Component Name: Waiakoa

Soil Surface Texture: silty clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 84 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	1 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4.23	Max: 7.3 Min: 6.6
2	1 inches	25 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4.23	Max: 7.3 Min: 6.1

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
3	25 inches	33 inches	stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42.34 Min: 4.23	Max: 8.4 Min: 7.4
4	33 inches	37 inches	bedrock	Not reported	Not reported	Max: 0.42 Min: 0.02	Max: Min:

Soil Map ID: 14

Soil Component Name: Water > 40 acres

Soil Surface Texture: silty clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class:
Hydric Status: Unknown

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

No Layer Information available.

Soil Map ID: 15

Soil Component Name: Alae

Soil Surface Texture: sandy loam

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14.11	Max: 7.8 Min: 7.4
2	7 inches	14 inches	stratified sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14.11	Max: 7.8 Min: 7.4
3	14 inches	55 inches	gravelly coarse sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel. COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel.	Max: 141 Min: 14.11	Max: 8.4 Min: 7.9

SEARCH RESULTS

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

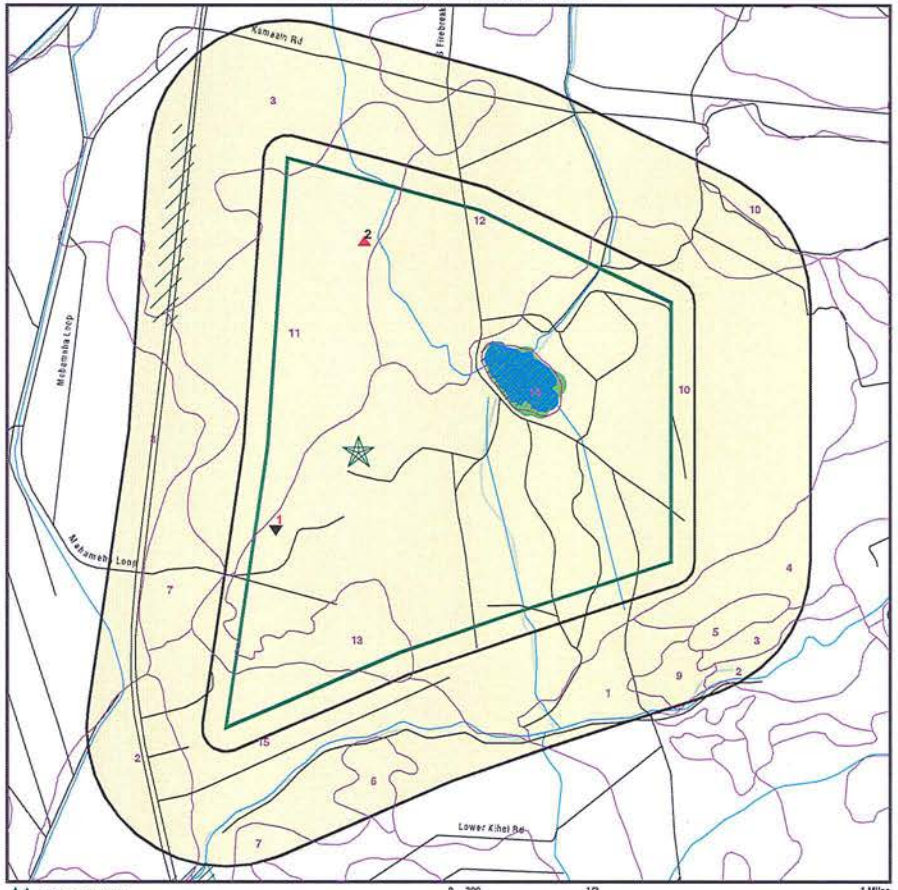
STANDARD ENVIRONMENTAL RECORDS

Name	Address	Dist/Dir	Map ID	Page
FORMER PUUNENE NAVY AIRPORT UST: State and tribal registered storage tank lists LUST: State and tribal leaking storage tank lists	SOUTH OF MOKULELE	<1/10 SW	▼ 1	21
MAUI AIRPORT MILITARY RES FUDS: Other Standard Environmental Records	Not Reported	<1/10 N	▲ 2	24

HISTORICAL USE RECORDS

Name	Address	Dist/Dir	Map ID	Page
Not Reported				

PRIMARY MAP - 4748527.6S



SITE NAME: Fields 815, 819, 914, 915, and 916 ADDRESS: Not Reported Kihei HI 96753 LAT/LONG: 20.818536 / 156.45993	CLIENT: Enviro Srvcs. and Trng. Center CONTACT: Sharla Nakashima INQUIRY #: 4748527.6s DATE: October 07, 2016 10:39 pm

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SECONDARY MAP - 4748527.6S



SITE NAME: Fields 815, 819, 914, 915, and 916 ADDRESS: Not Reported Kihei HI 96753 LAT/LONG: 20.818536 / 156.45993	CLIENT: Enviro Srvcs. and Trng. Center CONTACT: Sharla Nakashima INQUIRY #: 4748527.6s DATE: October 07, 2016 10:38 pm

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LEGEND

FACILITY NAME FACILITY ADDRESS, CITY, ST, ZIP			EDR SITE ID NUMBER
▼ MAP ID#	Direction Distance Range Relative Elevation	(Distance feet / miles) Feet Above Sea Level	ASTM 2600 Record Sources found in this report. Each database searched has been assigned to one or more categories. For detailed information about categorization, see the section of the report Records Searched and Currency.
Worksheet:			
Comments: Comments may be added on the online Vapor Encroachment Worksheet.			

DATABASE ACRONYM: Applicable categories (A hoverbox with database description).

FORMER PUUNENE NAVY AIRPORT SOUTH OF MOKULELE, PUUNENE, HI, 96784			U003732590
▼ 1	SW <1/10 23 ft. Lower Elevation	(0 ft. / 0 mi.) 79 ft. Above Sea Level	State and tribal leaking storage tank lists State and tribal registered storage tank lists
Worksheet:			

UST: State and tribal registered storage tank lists

Facility ID:	9-503623
Owner:	U.S. DEPT OF THE NAVY
Owner Address:	Not Reported
Owner City,St,Zip:	Puunene, 96784 96784
Latitude:	20.815813
Longitude:	-156.462737
Horizontal Reference Datum Name:	Not Reported
Horizontal Collection Method Name:	Not Reported
Tank ID:	R-1A
Date Installed:	Not Reported
Tank Status:	**Permanently Out of Use**
Date Closed:	03/30/2000
Tank Capacity:	50000
Substance:	Other
Tank ID:	R-1B
Date Installed:	Not Reported
Tank Status:	**Permanently Out of Use**
Date Closed:	03/30/2000
Tank Capacity:	50000
Substance:	Other
Tank ID:	R-1C

FORMER PUUNENE NAVY AIRPORT, SOUTH OF MOKULELE, PUUNENE, HI 96784 (Continued)

Date Installed:	Not Reported
Tank Status:	**Permanently Out of Use**
Date Closed:	03/30/2001
Tank Capacity:	50000
Substance:	Other
Tank ID:	R-2A
Date Installed:	Not Reported
Tank Status:	**Permanently Out of Use**
Date Closed:	10/04/2000
Tank Capacity:	25000
Substance:	Other
Tank ID:	R-2B
Date Installed:	Not Reported
Tank Status:	**Permanently Out of Use**
Date Closed:	10/04/2000
Tank Capacity:	25000
Substance:	Other
Tank ID:	R-2C
Date Installed:	Not Reported
Tank Status:	**Permanently Out of Use**
Date Closed:	04/10/2000
Tank Capacity:	25000
Substance:	Other
Tank ID:	R-2D
Date Installed:	Not Reported
Tank Status:	**Permanently Out of Use**
Date Closed:	04/10/2000
Tank Capacity:	25000
Substance:	Other
Tank ID:	R-3A
Date Installed:	Not Reported
Tank Status:	**Permanently Out of Use**
Date Closed:	11/16/2000
Tank Capacity:	50000
Substance:	Other
Tank ID:	R-3B
Date Installed:	Not Reported
Tank Status:	**Permanently Out of Use**
Date Closed:	11/16/2000
Tank Capacity:	50000
Substance:	Other

LUST: State and tribal leaking storage tank lists

FORMER PUUNENE NAVY AIRPORT, SOUTH OF MOKULELE, PUUNENE, HI 96784 (Continued)

Facility ID:	9-503623
Facility Status:	Site Cleanup Completed (NFA)
Facility Status Date:	06/13/2001
Release ID:	000079
Project Officer:	Jose Ruiz

MAUI AIRPORT MILITARY RES Not Reported, PUUNENE, HI,			1007212729
▲ 2	N <1/10	(0 ft. / 0 mi.)	Other Standard Environmental Records
	18 ft. Higher Elevation	120 ft. Above Sea Level	

Worksheet:

FUDS: Other Standard Environmental Records

EPA Region:	09
Congressional District:	02
FUDS Number:	H09HI0225
State:	HI
Facility Name:	MAUI AIRPORT MILITARY RES
Fiscal Year:	2013
City:	PUUNENE
Federal Facility ID:	HI9799F3960
Telephone:	808-835-4004
INST ID:	54616
County:	MAUI
RAB:	Not Reported
CORPS_DIST:	Honolulu District (POH)
NPL Status:	Not Listed
CTC:	5173.6000000000004
Current Owner:	State Government
Future Prog:	Not Reported
Description:	The former Maui Airport Military Reservation consists of 1,875 acres and is located midway to Kihei on Mokulele Highway. The airport was known as Puunene Naval Air Station and was built from 1936-1939. The airport was used by the Navy from 1940 to 1946 and was later returned for civilian uses. After the military left the site, the area was used for agriculture, ranging from sugar cultivation to animal husbandry. The current owner is the State of Hawaii.
Current Program:	Not Reported
History:	The site was used as a naval air station that also supported Army operations. Radio-controlled drones were used to aid in the development of accuracy among antiaircraft gunners. The site consisted of nine underground fuel storage tanks, a transformer building with a PCB transformer, and a former landfill that may need to be removed or remediated. Current use of the site includes a heliport, crop dusting airplane runway, and a drag strip. The County of Maui is proposing the area to be a county fairground.
Latitude Degree:	20
Latitude Minute:	50
Latitude Second:	33
Latitude Direction:	N
Longitude Degree:	-156
Longitude Minute:	28
Longitude Second:	35
Longitude Direction:	E

RECORD SOURCES AND CURRENCY

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

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

STANDARD ENVIRONMENTAL RECORDS

PRP: Potentially Responsible Parties
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013 Source: EPA
Number of Days to Update: 3 Telephone: 202-564-6023
Last EDR Contact :08/12/2016

RMP: Risk Management Plans
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 05/01/2016 Source: Environmental Protection Agency
Number of Days to Update: 99 Telephone: 202-564-8600
Last EDR Contact :07/25/2016

AIRS: List of Permitted Facilities
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

A listing of permitted facilities in the state.

Date of Government Version: 04/14/2016 Source: Department of Health
Number of Days to Update: 28 Telephone: 808-586-4200
Last EDR Contact :09/29/2016

BROWNFIELDS: Brownfields Sites
Standard Environmental Record Source: State and tribal Brownfields sites
Search Distance: 0.333 Mile

With certain legal exclusions and additions, the term 'brownfield site' means real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.

Date of Government Version: 05/06/2016 Source: Department of Health
Number of Days to Update: 69 Telephone: 808-586-4249
Last EDR Contact :08/26/2016

CDL: Clandestine Drug Lab Listing
Standard Environmental Record Source: Other Standard Environmental Records

RECORD SOURCES AND CURRENCY

Search Distance: Property

A listing of clandestine drug lab site locations.

Date of Government Version: 08/04/2010 Source: Department of Health
Number of Days to Update: 42 Telephone: 808-586-4249
Last EDR Contact :09/26/2016

DRYCLEANERS: Permitted Drycleaner Facility Listing
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: 0.25 Mile

A listing of permitted drycleaner facilities in the state.

Date of Government Version: 01/20/2016 Source: Department of Health
Number of Days to Update: 28 Telephone: 808-586-4200
Last EDR Contact :10/03/2016

ENG CONTROLS: Engineering Control Sites
Standard Environmental Record Source: State and tribal institutional control / engineering control registries
Search Distance: Property

A listing of sites with engineering controls in place.

Date of Government Version: 05/06/2016 Source: Department of Health
Number of Days to Update: 69 Telephone: 404-586-4249
Last EDR Contact :08/26/2016

Financial Assurance: Financial Assurance Information Listing
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

A listing of financial assurance information for underground storage tank facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 06/21/2016 Source: Department of Health
Number of Days to Update: 39 Telephone: 808-586-4226
Last EDR Contact :09/26/2016

INST CONTROL: Sites with Institutional Controls
Standard Environmental Record Source: State and tribal institutional control / engineering control registries
Search Distance: Property

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

Date of Government Version: 05/06/2016 Source: Department of Health
Number of Days to Update: 69 Telephone: 808-586-4249
Last EDR Contact :08/26/2016

LUST: Leaking Underground Storage Tank Database
Standard Environmental Record Source: State and tribal leaking storage tank lists
Search Distance: 0.333 Mile

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

Date of Government Version: 01/13/2016
Number of Days to Update: 47
Last EDR Contact :08/31/2016
Source: Department of Health
Telephone: 808-586-4228

SHWS: Sites List
Standard Environmental Record Source: State and tribal - equivalent CERCLIS
Search Distance: 0.333 Mile

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

Date of Government Version: 05/06/2016
Number of Days to Update: 69
Last EDR Contact :08/26/2016
Source: Department of Health
Telephone: 808-586-4249

SPILLS: Release Notifications
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

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

Date of Government Version: 01/14/2016
Number of Days to Update: 42
Last EDR Contact :08/26/2016
Source: Department of Health
Telephone: 808-586-4249

SWF/LF: Permitted Landfills in the State of Hawaii
Standard Environmental Record Source: State and tribal landfill / solid waste disposal
Search Distance: 0.333 Mile

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

Date of Government Version: 09/17/2012
Number of Days to Update: 37
Last EDR Contact :09/30/2016
Source: Department of Health
Telephone: 808-586-4245

UIC: Underground Injection Wells Listing
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

A listing of underground injection well locations.

Date of Government Version: 02/07/2013
Number of Days to Update: 56
Last EDR Contact :08/24/2016
Source: Department of Health
Telephone: 808-586-4258

UST: Underground Storage Tank Database
Standard Environmental Record Source: State and tribal registered storage tank lists
Search Distance: Property

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

Date of Government Version: 01/13/2016
Number of Days to Update: 47
Source: Department of Health
Telephone: 808-586-4228

Last EDR Contact :08/31/2016

VCP: Voluntary Response Program Sites
Standard Environmental Record Source: State and tribal voluntary cleanup sites
Search Distance: 0.333 Mile

Sites participating in the Voluntary Response Program. The purpose of the VRP is to streamline the cleanup process in a way that will encourage prospective developers, lenders, and purchasers to voluntarily cleanup properties.

Date of Government Version: 05/06/2016
Number of Days to Update: 69
Last EDR Contact :08/26/2016
Source: Department of Health
Telephone: 808-586-4249

2020 COR ACTION: 2020 Corrective Action Program List
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: 0.25 Mile

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Number of Days to Update: 6
Last EDR Contact :09/06/2016
Source: Environmental Protection Agency
Telephone: 703-308-4044

COAL ASH DOE: Steam-Electric Plant Operation Data
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Number of Days to Update: 76
Last EDR Contact :09/09/2016
Source: Department of Energy
Telephone: 202-586-8719

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: 0.333 Mile

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Number of Days to Update: 40
Last EDR Contact :09/06/2016
Source: Environmental Protection Agency
Telephone: Not Reported

CONSENT: Superfund (CERCLA) Consent Decrees
Standard Environmental Record Source: Federal NPL
Search Distance: 0.333 Mile

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

Date of Government Version: 03/31/2016
Number of Days to Update: 53
Last EDR Contact :09/26/2016
Source: Department of Justice, Consent Decree Library
Telephone: Varies

CORRACTS: Corrective Action Report
Standard Environmental Record Source: Federal RCRA CORRACTS facilities list
Search Distance: 0.333 Mile

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 06/27/2016 Source: EPA
Number of Days to Update: 64 Telephone: 800-424-9346
Last EDR Contact :09/28/2016

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
Standard Environmental Record Source: State and tribal landfill / solid waste disposal
Search Distance: 0.333 Mile

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

Date of Government Version: 01/12/2009 Source: EPA, Region 9
Number of Days to Update: 137 Telephone: 415-947-4219
Last EDR Contact :07/20/2016

DOCKET HWC: Hazardous Waste Compliance Docket Listing
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 06/02/2016 Source: Environmental Protection Agency
Number of Days to Update: 91 Telephone: 202-564-0527
Last EDR Contact :08/24/2016

DOT OPS: Incident and Accident Data
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

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

Date of Government Version: 07/31/2012 Source: Department of Transporation, Office of Pipeline Safety
Number of Days to Update: 42 Telephone: 202-366-4595
Last EDR Contact :08/02/2016

Delisted NPL: National Priority List Deletions
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: 0.333 Mile

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

Date of Government Version: 03/07/2016 Source: EPA
Number of Days to Update: 10 Telephone: Not Reported
Last EDR Contact :10/05/2016

ECHO: Enforcement & Compliance History Information
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 09/20/2015 Source: Environmental Protection Agency
Number of Days to Update: 103 Telephone: 202-564-2280
Last EDR Contact :09/20/2016

EPA WATCH LIST: EPA WATCH LIST
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013 Source: Environmental Protection Agency
Number of Days to Update: 88 Telephone: 617-520-3000
Last EDR Contact :08/08/2016

ERNS: Emergency Response Notification System
Standard Environmental Record Source: Federal ERNS list
Search Distance: Property

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

Date of Government Version: 03/28/2016 Source: National Response Center, United States Coast Guard
Number of Days to Update: 51 Telephone: 202-267-2180
Last EDR Contact :09/29/2016

FEMA UST: Underground Storage Tank Listing
Standard Environmental Record Source: State and tribal registered storage tank lists
Search Distance: Property

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010 Source: FEMA
Number of Days to Update: 55 Telephone: 202-646-5797
Last EDR Contact :07/07/2016

FINDS: Facility Index System/Facility Registry System
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

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

Date of Government Version: 07/20/2015 Source: EPA
Number of Days to Update: 55 Telephone: Not Reported
Last EDR Contact :09/07/2016

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

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

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

Date of Government Version: 04/09/2009
Number of Days to Update: 25
Last EDR Contact :08/17/2016

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667

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

Standard Environmental Record Source: Other Standard Environmental Records

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

Date of Government Version: 04/09/2009
Number of Days to Update: 25
Last EDR Contact :08/17/2016

Source: EPA
Telephone: 202-566-1667

FUDS: Formerly Used Defense Sites

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: 0.333 Mile

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

Date of Government Version: 01/31/2015
Number of Days to Update: 97
Last EDR Contact :09/09/2016

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285

FUELS PROGRAM: EPA Fuels Program Registered Listing

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 05/24/2016
Number of Days to Update: 49
Last EDR Contact :08/23/2016

Source: EPA
Telephone: 800-385-6164

FUSRAP: Formerly Utilized Sites Remedial Action Program

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: 0.333 Mile

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 07/21/2016
Number of Days to Update: 59
Last EDR Contact :07/26/2016

Source: Department of Energy
Telephone: 202-586-3559

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

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

Date of Government Version: 10/19/2006
Number of Days to Update: 40
Last EDR Contact :12/17/2007

Source: Environmental Protection Agency
Telephone: 202-564-2501

HMIRS: Hazardous Materials Information Reporting System

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

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

Date of Government Version: 06/27/2016
Number of Days to Update: 87
Last EDR Contact :09/27/2016

Source: U.S. Department of Transportation
Telephone: 202-366-4555

ICIS: Integrated Compliance Information System

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

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

Date of Government Version: 01/23/2015
Number of Days to Update: 31
Last EDR Contact :07/07/2016

Source: Environmental Protection Agency
Telephone: 202-564-5088

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land

Standard Environmental Record Source: State and tribal leaking storage tank lists

Search Distance: 0.333 Mile

A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/27/2015
Number of Days to Update: 67
Last EDR Contact :07/29/2016

Source: EPA Region 1
Telephone: 617-918-1313

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

Standard Environmental Record Source: State and tribal leaking storage tank lists

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 01/07/2016
Number of Days to Update: 41
Last EDR Contact :07/27/2016

Source: EPA Region 10
Telephone: 206-553-2857

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land

Standard Environmental Record Source: State and tribal leaking storage tank lists

LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 02/05/2016

Source: EPA Region 4

Number of Days to Update: 35 Telephone: 404-562-8677
Last EDR Contact :07/26/2016

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal leaking storage tank lists
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 02/17/2016 Source: EPA, Region 5
Number of Days to Update: 37 Telephone: 312-886-7439
Last EDR Contact :07/27/2016

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal leaking storage tank lists
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 12/11/2015 Source: EPA Region 6
Number of Days to Update: 105 Telephone: 214-665-6597
Last EDR Contact :07/27/2016

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal leaking storage tank lists
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 10/09/2015 Source: EPA Region 7
Number of Days to Update: 112 Telephone: 913-551-7003
Last EDR Contact :07/27/2016

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal leaking storage tank lists
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/13/2015 Source: EPA Region 8
Number of Days to Update: 118 Telephone: 303-312-6271
Last EDR Contact :07/27/2016

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal leaking storage tank lists
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 02/25/2016 Source: Environmental Protection Agency
Number of Days to Update: 37 Telephone: 415-972-3372
Last EDR Contact :07/27/2016

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: 0.333 Mile

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998 Source: Environmental Protection Agency
Number of Days to Update: 52 Telephone: 703-308-8245
Last EDR Contact :08/05/2016

INDIAN UST R1: Underground Storage Tanks on Indian Land

Standard Environmental Record Source: State and tribal registered storage tank lists
Search Distance: Property

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/20/2015 Source: EPA, Region 1
Number of Days to Update: 67 Telephone: 617-918-1313
Last EDR Contact :07/29/2016

INDIAN UST R10: Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal registered storage tank lists
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 01/07/2016 Source: EPA Region 10
Number of Days to Update: 41 Telephone: 206-553-2857
Last EDR Contact :07/27/2016

INDIAN UST R4: Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal registered storage tank lists
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 02/05/2016 Source: EPA Region 4
Number of Days to Update: 35 Telephone: 404-562-9424
Last EDR Contact :07/26/2016

INDIAN UST R5: Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal registered storage tank lists
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 11/05/2015 Source: EPA Region 5
Number of Days to Update: 52 Telephone: 312-886-6136
Last EDR Contact :07/27/2016

INDIAN UST R6: Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal registered storage tank lists
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 12/03/2015 Source: EPA Region 6
Number of Days to Update: 120 Telephone: 214-665-7591
Last EDR Contact :07/27/2016

INDIAN UST R7: Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal registered storage tank lists
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/23/2014 Source: EPA Region 7
Number of Days to Update: 65 Telephone: 913-551-7003
Last EDR Contact :07/27/2016

INDIAN UST R8: Underground Storage Tanks on Indian Land

Standard Environmental Record Source: State and tribal registered storage tank lists

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 01/26/2016
Number of Days to Update: 119
Last EDR Contact :07/27/2016

Source: EPA Region 8
Telephone: 303-312-6137

INDIAN UST R9: Underground Storage Tanks on Indian Land

Standard Environmental Record Source: State and tribal registered storage tank lists

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 02/25/2016
Number of Days to Update: 37
Last EDR Contact :07/27/2016

Source: EPA Region 9
Telephone: 415-972-3368

INDIAN VCP R1: Voluntary Cleanup Priority Listing

Standard Environmental Record Source: State and tribal voluntary cleanup sites
Search Distance: Property

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Number of Days to Update: 142
Last EDR Contact :09/26/2016

Source: EPA, Region 1
Telephone: 617-918-1102

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

Standard Environmental Record Source: State and tribal voluntary cleanup sites
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Number of Days to Update: 27
Last EDR Contact :04/20/2009

Source: EPA, Region 7
Telephone: 913-551-7365

LEAD SMELTER 1: Lead Smelter Sites

Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

A listing of former lead smelter site locations.

Date of Government Version: 03/07/2016
Number of Days to Update: 148
Last EDR Contact :09/29/2016

Source: Environmental Protection Agency
Telephone: 703-603-8787

LEAD SMELTER 2: Lead Smelter Sites

Standard Environmental Record Source: Other Standard Environmental Records

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Number of Days to Update: 36
Last EDR Contact :12/02/2009

Source: American Journal of Public Health
Telephone: 703-305-6451

LIENS 2: CERCLA Lien Information

Standard Environmental Record Source: Federal CERCLIS
Search Distance: Property

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

Date of Government Version: 02/18/2014
Number of Days to Update: 37
Last EDR Contact :07/29/2016

Source: Environmental Protection Agency
Telephone: 202-564-6023

LUCIS: Land Use Control Information System

Standard Environmental Record Source: Federal institutional controls / engineering controls registries
Search Distance: 0.333 Mile

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

Date of Government Version: 05/28/2015
Number of Days to Update: 13
Last EDR Contact :08/12/2016

Source: Department of the Navy
Telephone: 843-820-7326

MLTS: Material Licensing Tracking System

Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

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

Date of Government Version: 03/07/2016
Number of Days to Update: 28
Last EDR Contact :09/05/2016

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169

NPL: National Priority List

Standard Environmental Record Source: Federal NPL
Search Distance: 0.333 Mile

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

Date of Government Version: 03/07/2016
Number of Days to Update: 10
Last EDR Contact :10/05/2016

Source: EPA
Telephone: Not Reported

NPL Site Boundaries

Sources:

EPA"s Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-566-0690

EPA Region 1
Telephone: 617-918-1102

EPA Region 2
Telephone: 212-637-4293

EPA Region 3
Telephone: 215-814-5418

EPA Region 4
Telephone: 404-562-8681

EPA Region 5
Telephone: 312-353-1063

EPA Region 6
Telephone: 214-655-6659

EPA Region 7
Telephone: 913-551-7247

EPA Region 8
Telephone: 303-312-6118

EPA Region 9
Telephone: 415-947-4579

EPA Region 10
Telephone: 206-553-4479

NPL LIENS: Federal Superfund Liens

Standard Environmental Record Source: Federal NPL

Search Distance: Property

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

Date of Government Version: 10/15/1991
Number of Days to Update: 56
Last EDR Contact :08/15/2011

Source: EPA
Telephone: 202-564-4267

ODI: Open Dump Inventory

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: 0.333 Mile

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

Date of Government Version: 06/30/1985
Number of Days to Update: 39
Last EDR Contact :06/09/2004

Source: Environmental Protection Agency
Telephone: 800-424-9346

PADS: PCB Activity Database System

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

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

Date of Government Version: 01/20/2016
Number of Days to Update: 127
Last EDR Contact :07/15/2016

Source: EPA
Telephone: 202-566-0500

PCB TRANSFORMER: PCB Transformer Registration Database

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Number of Days to Update: 83
Last EDR Contact :07/29/2016

Source: Environmental Protection Agency
Telephone: 202-566-0517

Proposed NPL: Proposed National Priority List Sites

Standard Environmental Record Source: Federal NPL

Search Distance: 0.333 Mile

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

Date of Government Version: 03/07/2016
Number of Days to Update: 10
Last EDR Contact :10/05/2016

Source: EPA
Telephone: Not Reported

RAATS: RCRA Administrative Action Tracking System

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

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

Date of Government Version: 04/17/1995
Number of Days to Update: 35
Last EDR Contact :06/02/2008

Source: EPA
Telephone: 202-564-4104

RADINFO: Radiation Information Database

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

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

Date of Government Version: 07/07/2015
Number of Days to Update: 69
Last EDR Contact :10/05/2016

Source: Environmental Protection Agency
Telephone: 202-343-9775

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

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

Date of Government Version: 06/21/2016
Number of Days to Update: 64
Last EDR Contact :09/28/2016

Source: Environmental Protection Agency
Telephone: 703-308-8895

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

Standard Environmental Record Source: Federal RCRA generators list

Search Distance: Property

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

Date of Government Version: 06/21/2016 Source: Environmental Protection Agency
Number of Days to Update: 64 Telephone: 703-308-8895
Last EDR Contact :09/28/2016

RCRA-LQG: RCRA - Large Quantity Generators
Standard Environmental Record Source: Federal RCRA generators list
Search Distance: Property

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

Date of Government Version: 06/21/2016 Source: Environmental Protection Agency
Number of Days to Update: 64 Telephone: 703-308-8895
Last EDR Contact :09/28/2016

RCRA-SQG: RCRA - Small Quantity Generators
Standard Environmental Record Source: Federal RCRA generators list
Search Distance: Property

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

Date of Government Version: 06/21/2016 Source: Environmental Protection Agency
Number of Days to Update: 64 Telephone: 703-308-8895
Last EDR Contact :09/28/2016

RCRA-TSDF: RCRA - Treatment, Storage and Disposal
Standard Environmental Record Source: Federal RCRA TSD facilities list
Search Distance: 0.333 Mile

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

Date of Government Version: 06/21/2016 Source: Environmental Protection Agency
Number of Days to Update: 64 Telephone: 703-308-8895
Last EDR Contact :09/28/2016

ROD: Records Of Decision
Standard Environmental Record Source: Federal NPL
Search Distance: 0.333 Mile

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

Date of Government Version: 11/25/2013 Source: EPA

Number of Days to Update: 74 Telephone: 703-416-0223
Last EDR Contact :09/09/2016

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: 0.333 Mile

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

Date of Government Version: 03/07/2011 Source: Environmental Protection Agency
Number of Days to Update: 54 Telephone: 615-532-8599
Last EDR Contact :08/15/2016

SEMS: Superfund Enterprise Management System
Standard Environmental Record Source: Federal CERCLIS
Search Distance: 0.333 Mile

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 03/07/2016 Source: EPA
Number of Days to Update: 10 Telephone: 800-424-9346
Last EDR Contact :07/22/2016

SEMS-ARCHIVE: Superfund Enterprise Management System Archive
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: 0.333 Mile

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 03/07/2016 Source: EPA
Number of Days to Update: 10 Telephone: 800-424-9346
Last EDR Contact :07/22/2016

SSTS: Section 7 Tracking Systems
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

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

Date of Government Version: 12/31/2009 Source: EPA
Number of Days to Update: 77 Telephone: 202-564-4203

Last EDR Contact :07/25/2016

TRIS: Toxic Chemical Release Inventory System

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

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

Date of Government Version: 12/31/2014 Source: EPA
Number of Days to Update: 133 Telephone: 202-566-0250
Last EDR Contact :08/26/2016

TSCA: Toxic Substances Control Act

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

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

Date of Government Version: 12/31/2012 Source: EPA
Number of Days to Update: 14 Telephone: 202-260-5521
Last EDR Contact :09/23/2016

UMTRA: Uranium Mill Tailings Sites

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: 0.333 Mile

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

Date of Government Version: 09/14/2010 Source: Department of Energy
Number of Days to Update: 146 Telephone: 505-845-0011
Last EDR Contact :09/09/2016

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/20/2015 Source: EPA
Number of Days to Update: 69 Telephone: 202-564-2496
Last EDR Contact :09/26/2016

US AIRS MINOR: Air Facility System Data

Standard Environmental Record Source: Other Standard Environmental Records

A listing of minor source facilities.

Date of Government Version: 10/20/2015 Source: EPA
Number of Days to Update: 69 Telephone: 202-564-2496

Last EDR Contact :09/26/2016

US BROWNFIELDS: A Listing of Brownfields Sites

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: 0.333 Mile

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/21/2016 Source: Environmental Protection Agency
Number of Days to Update: 72 Telephone: 202-566-2777
Last EDR Contact :09/21/2016

US CDL: Clandestine Drug Labs

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

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

Date of Government Version: 08/30/2016 Source: Drug Enforcement Administration
Number of Days to Update: 17 Telephone: 202-307-1000
Last EDR Contact :08/31/2016

US ENG CONTROLS: Engineering Controls Sites List

Standard Environmental Record Source: Federal institutional controls / engineering controls registries

Search Distance: Property

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

Date of Government Version: 05/09/2016 Source: Environmental Protection Agency
Number of Days to Update: 93 Telephone: 703-603-0695
Last EDR Contact :08/31/2016

US FIN ASSUR: Financial Assurance Information

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 05/08/2016 Source: Environmental Protection Agency
Number of Days to Update: 107 Telephone: 202-566-1917
Last EDR Contact :08/17/2016

US HIST CDL: National Clandestine Laboratory Register

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 08/31/2016
Number of Days to Update: 17
Last EDR Contact :08/31/2016

Source: Drug Enforcement Administration
Telephone: 202-307-1000

US INST CONTROL: Sites with Institutional Controls

Standard Environmental Record Source: Federal institutional controls / engineering controls registries
Search Distance: Property

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

Date of Government Version: 05/09/2016
Number of Days to Update: 93
Last EDR Contact :08/31/2016

Source: Environmental Protection Agency
Telephone: 703-603-0695

US MINES: Mines Master Index File

Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

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

Date of Government Version: 08/05/2016
Number of Days to Update: 22
Last EDR Contact :09/01/2016

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959

DOD: Department of Defense Sites

Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: 0.333 Mile

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

Date of Government Version: 12/31/2005
Number of Days to Update: 62
Last EDR Contact :07/15/2016

Source: USGS
Telephone: 888-275-8747

INDIAN RESERV: Indian Reservations

Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Number of Days to Update: 34
Last EDR Contact :07/15/2016

Source: USGS
Telephone: 202-208-3710

PWS: Public Water System Data

Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

This Safe Drinking Water Information System (SDWIS) file contains public water systems name and address, population served and the primary source of water

Date of Government Version: 12/17/2013
Number of Days to Update: 279
Last EDR Contact :08/29/2016

Source: EPA
Telephone: Not Reported

HISTORICAL USE RECORDS

RGA HWS: Recovered Government Archive State Hazardous Waste Facilities List
Standard Environmental Record Source: Exclusive Recovered Govt. Archives
Search Distance: Property

The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

Date of Government Version: Not Reported
Number of Days to Update: 191
Last EDR Contact :06/01/2012
Source: Department of Health
Telephone: Not Reported

RGA LF: Recovered Government Archive Solid Waste Facilities List
Standard Environmental Record Source: Exclusive Recovered Govt. Archives
Search Distance: Property

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

Date of Government Version: Not Reported
Number of Days to Update: 200
Last EDR Contact :06/01/2012
Source: Department of Health
Telephone: Not Reported

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank
Standard Environmental Record Source: Exclusive Recovered Govt. Archives
Search Distance: Property

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

Date of Government Version: Not Reported
Number of Days to Update: 186
Last EDR Contact :06/01/2012
Source: Department of Health
Telephone: Not Reported

EDR Hist Auto: EDR Exclusive Historic Gas Stations
Standard Environmental Record Source: Historical Gas Stations
Search Distance: 0.125 Mile

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: 02/20/2007
Number of Days to Update: 42
Last EDR Contact :02/21/2007
Source: EDR, Inc.
Telephone: Not Reported

EDR Hist Cleaner: EDR Exclusive Historic Dry Cleaners
Standard Environmental Record Source: Historical Dry Cleaners
Search Distance: 0.125 Mile

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: 02/20/2007
Number of Days to Update: 42
Last EDR Contact :02/21/2007
Source: EDR, Inc.
Telephone: Not Reported

EDR MGP: EDR Proprietary Manufactured Gas Plants
Standard Environmental Record Source: Former manufactured Gas Plants
Search Distance: 0.333 Mile

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: 08/28/2009
Number of Days to Update: 55
Last EDR Contact :11/30/2012
Source: EDR, Inc.
Telephone: Not Reported

RECORD SOURCES AND CURRENCY

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5' minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW® Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW® Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services. The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

STREET AND ADDRESS INFORMATION

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Field 411
Not Reported
Kihei, HI 96753

Inquiry Number: 4748534.16s
October 7, 2016

EDR Vapor Encroachment Screen

Prepared using EDR's Vapor Encroachment Worksheet

EDR® Environmental Data Resources Inc

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of the ASTM Standard Practice for Assessment of Vapor Encroachment into Structures on Property Involved in Real Estate Transactions (E 2600).

		Summary		
STANDARD ENVIRONMENTAL RECORDS	**Maximum Search Distance***	property	1/10	1/10 - 1/3
Federal NPL	0.333	0	0	0
Federal CERCLIS	0.333	0	0	0
Federal RCRA CORRACTS facilities list	0.333	0	0	0
Federal RCRA TSD facilities list	0.333	0	0	0
Federal RCRA generators list	property	0	-	-
Federal institutional controls / engineering controls registries	0.333	0	0	0
Federal ERNS list	property	0	-	-
State and tribal - equivalent NPL	not searched	-	-	-
State and tribal - equivalent CERCLIS	0.333	0	0	0
State and tribal landfill / solid waste disposal	0.333	0	0	0
State and tribal leaking storage tank lists	0.333	0	0	0
State and tribal registered storage tank lists	property	0	-	-
State and tribal institutional control / engineering control registries	property	0	-	-
State and tribal voluntary cleanup sites	0.333	0	0	0
State and tribal Brownfields sites	0.333	0	0	0
Other Standard Environmental Records	0.333	0	0	0
HISTORICAL USE RECORDS				
Former manufactured Gas Plants	0.333	0	0	0
Historical Gas Stations	0.125	0	0	0
Historical Dry Cleaners	0.125	0	0	0
Exclusive Recovered Govt. Archives	property	0	-	-

*Each category may include several separate databases, each having a different search distance. For each category, the table reports the maximum search distance applied. See the section 'Record Sources and Currency' for information on individual databases.

EXECUTIVE SUMMARY

TARGET PROPERTY INFORMATION

ADDRESS

FIELD 411
NOT REPORTED
KIHEI, HI 96753

COORDINATES

Latitude (North):	20.802742 - 20° 48' 9.871216"
Longitude (West):	156.403207 - 156° 24' 11.5686035"
Elevation:	607 ft. above sea level

EXECUTIVE SUMMARY

PHYSICAL SETTING INFORMATION

Flood Zone:	Available
NWI Wetlands:	Available

AQUIFLOW®

Search Radius: 0.333 Mile.

No Aquiflow sites reported.

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name:	Keahua
Soil Surface Texture:	silty clay loam
Hydrologic Group:	Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.
Soil Drainage Class:	Well drained
Hydric Status:	Not hydric
Corrosion Potential - Uncoated Steel:	Low
Depth to Bedrock Min:	> 0 inches
Depth to Watertable Min:	> 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	CL-K (proposed)	Max: 42 Min: 4.23	Max: 6.5 Min: 6.1

EXECUTIVE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	9 inches	33 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	CL-K (proposed)	Max: 14.11 Min: 1.41	Max: 6.5 Min: 6.1
3	33 inches	61 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	CL-K (proposed)	Max: 4.23 Min: 1.41	Max: 7.3 Min: 6.6
4	61 inches	70 inches	very gravelly clay loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14.11 Min: 1.41	Max: 7.3 Min: 6.6

Soil Map ID: 2

Soil Component Name:	Keahua
Soil Surface Texture:	very stony silty clay loam
Hydrologic Group:	Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.
Soil Drainage Class:	Well drained
Hydric Status:	Not hydric
Corrosion Potential - Uncoated Steel:	Moderate
Depth to Bedrock Min:	> 0 inches
Depth to Watertable Min:	> 0 inches

EXECUTIVE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	very stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 42 Min: 4.23	Max: 6.5 Min: 6.1
2	9 inches	33 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 1.41	Max: 7.3 Min: 6.6
3	33 inches	61 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 4.23 Min: 1.41	Max: 7.3 Min: 6.6
4	61 inches	70 inches	extremely gravelly clay loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 1.41	Max: 7.3 Min: 6.6

Soil Map ID: 3

Soil Component Name:	Pulehu
Soil Surface Texture:	cobbly silt loam
Hydrologic Group:	Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.
Soil Drainage Class:	Well drained
Hydric Status:	Not hydric
Corrosion Potential - Uncoated Steel:	Moderate
Depth to Bedrock Min:	> 0 inches
Depth to Watertable Min:	> 0 inches

EXECUTIVE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	20 inches	cobbly silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4.23	Max: 7.3 Min: 6.6
2	20 inches	59 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141.14 Min: 14.11	Max: 7.8 Min: 6.6

Soil Map ID: 4

Soil Component Name: Keahua

Soil Surface Texture: cobbly silty clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	cobbly silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42.34 Min: 4.23	Max: 6.5 Min: 6.1

EXECUTIVE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	9 inches	33 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14.11 Min: 1.41	Max: 7.3 Min: 6.6
3	33 inches	61 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 4.23 Min: 1.41	Max: 7.3 Min: 6.6
4	61 inches	70 inches	extremely gravelly clay loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 1.41	Max: 7.3 Min: 6.6

Soil Map ID: 5

Soil Component Name: Waiakoa

Soil Surface Texture: very stony silty clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 84 inches

Depth to Watertable Min: > 0 inches

EXECUTIVE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	1 inches	very stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 4.23	Max: 7.3 Min: 6.6
2	1 inches	25 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 4.23	Max: 7.3 Min: 6.1
3	25 inches	33 inches	stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 42.34 Min: 4.23	Max: 8.4 Min: 7.4
4	33 inches	37 inches	bedrock	Not reported	Not reported	Max: 0.42 Min: 0.02	Max: Min:

Soil Map ID: 6

Soil Component Name: Waiakoa

Soil Surface Texture: extremely stony silty clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 84 inches

Depth to Watertable Min: > 0 inches

EXECUTIVE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	1 inches	extremely stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 4.23	Max: 7.3 Min: 6.6
2	1 inches	25 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 4.23	Max: 7.3 Min: 6.1
3	25 inches	33 inches	stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 42.34 Min: 4.23	Max: 8.4 Min: 7.4
4	33 inches	37 inches	bedrock	Not reported	Not reported	Max: 0.42 Min: 0.02	Max: Min:

Soil Map ID: 7

Soil Component Name: Pulehu

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	20 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4.23	Max: 7.3 Min: 6.6
2	20 inches	59 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141.14 Min: 14.11	Max: 7.8 Min: 6.6

Soil Map ID: 8

Soil Component Name: Alae

Soil Surface Texture: cobbly sandy loam

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	cobbly sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14.11	Max: 7.3 Min: 6.6

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	7 inches	14 inches	stratified sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14.11	Max: 7.8 Min: 7.4
3	14 inches	55 inches	gravelly coarse sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel. COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel.	Max: 141 Min: 14.11	Max: 8.4 Min: 7.9

Soil Map ID: 9

Soil Component Name: Alae

Soil Surface Texture: sandy loam

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14.11	Max: 7.8 Min: 7.4

EXECUTIVE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	7 inches	14 inches	stratified sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14.11	Max: 7.8 Min: 7.4
3	14 inches	55 inches	gravelly coarse sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel. COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel.	Max: 141 Min: 14.11	Max: 8.4 Min: 7.9

Soil Map ID: 10

Soil Component Name: Waiakoa

Soil Surface Texture: silty clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 84 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	1 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel. COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel.	Max: 14 Min: 4.23	Max: 7.3 Min: 6.6

EXECUTIVE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	1 inches	25 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel. COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel.	Max: 14 Min: 4.23	Max: 7.3 Min: 6.1
3	25 inches	33 inches	stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel. COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel.	Max: 42.34 Min: 4.23	Max: 8.4 Min: 7.4
4	33 inches	37 inches	bedrock	Not reported	Not reported	Max: 0.42 Min: 0.02	Max: Min:

Soil Map ID: 11

Soil Component Name: Keahua

Soil Surface Texture: cobbly silty clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

EXECUTIVE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	cobbly silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel. COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel.	Max: 42 Min: 4.23	Max: 6.5 Min: 6.1
2	9 inches	33 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel. COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel.	Max: 14 Min: 1.41	Max: 7.3 Min: 6.6
3	33 inches	61 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel. COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel.	Max: 4.23 Min: 1.41	Max: 7.3 Min: 6.6
4	61 inches	70 inches	extremely gravelly clay loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14.11 Min: 1.41	Max: 7.3 Min: 6.6

Soil Map ID: 12

Soil Component Name: Waiakoa

Soil Surface Texture: extremely stony silty clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

EXECUTIVE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 71 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	0 inches	extremely stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 4.23	Max: 7.3 Min: 6.6
2	0 inches	20 inches	extremely stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 4.23	Max: 7.3 Min: 6.1
3	20 inches	27 inches	stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 42.34 Min: 4.23	Max: 8.4 Min: 7.4
4	27 inches	31 inches	bedrock	Not reported	Not reported	Max: 0.42 Min: 0.02	Max: Min:

Soil Map ID: 13

Soil Component Name: Pulehu

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	20 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4.23	Max: 7.3 Min: 6.6
2	20 inches	59 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141.14 Min: 14.11	Max: 7.8 Min: 6.6

SEARCH RESULTS

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

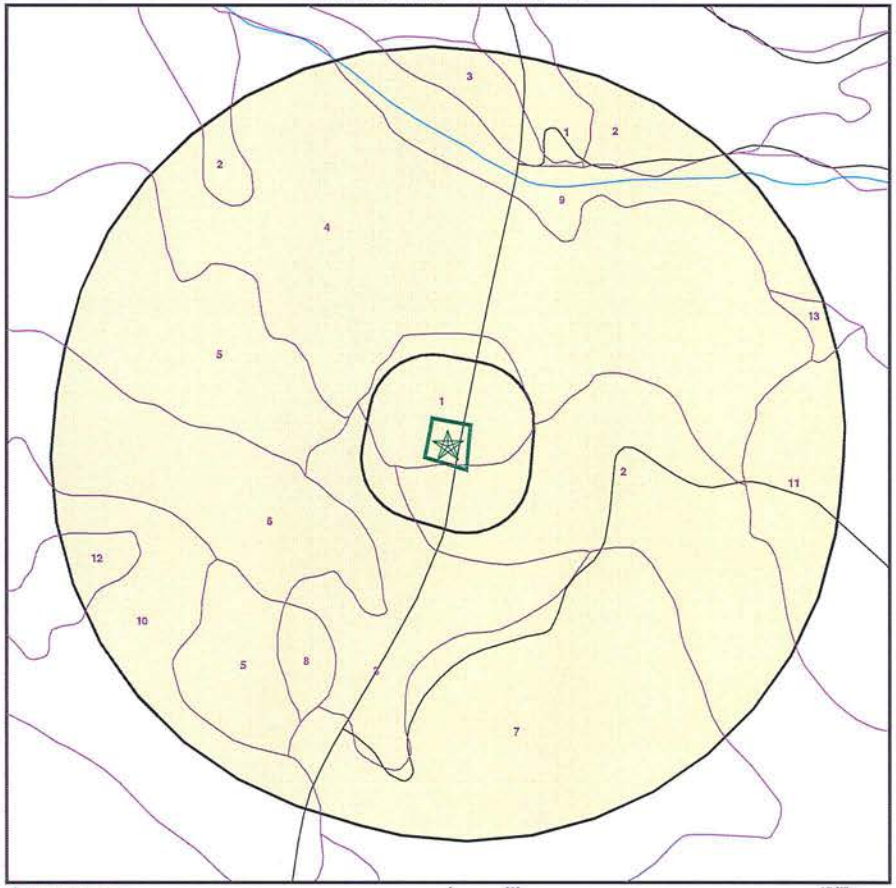
STANDARD ENVIRONMENTAL RECORDS

Name	Address	Dist/Dir	Map ID	Page
Not Reported				

HISTORICAL USE RECORDS

Name	Address	Dist/Dir	Map ID	Page
Not Reported				

PRIMARY MAP - 4748534.16S



0 300 1/2 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- SSURGO Soil

SITE NAME: Field 411 ADDRESS: Not Reported Kihei HI 96753 LAT/LONG: 20.802742 / 156.403207	CLIENT: Enviro Srvcs. and Trng. Center CONTACT: Sharla Nakashima INQUIRY #: 4748534.16s DATE: October 07, 2016 10:37 pm

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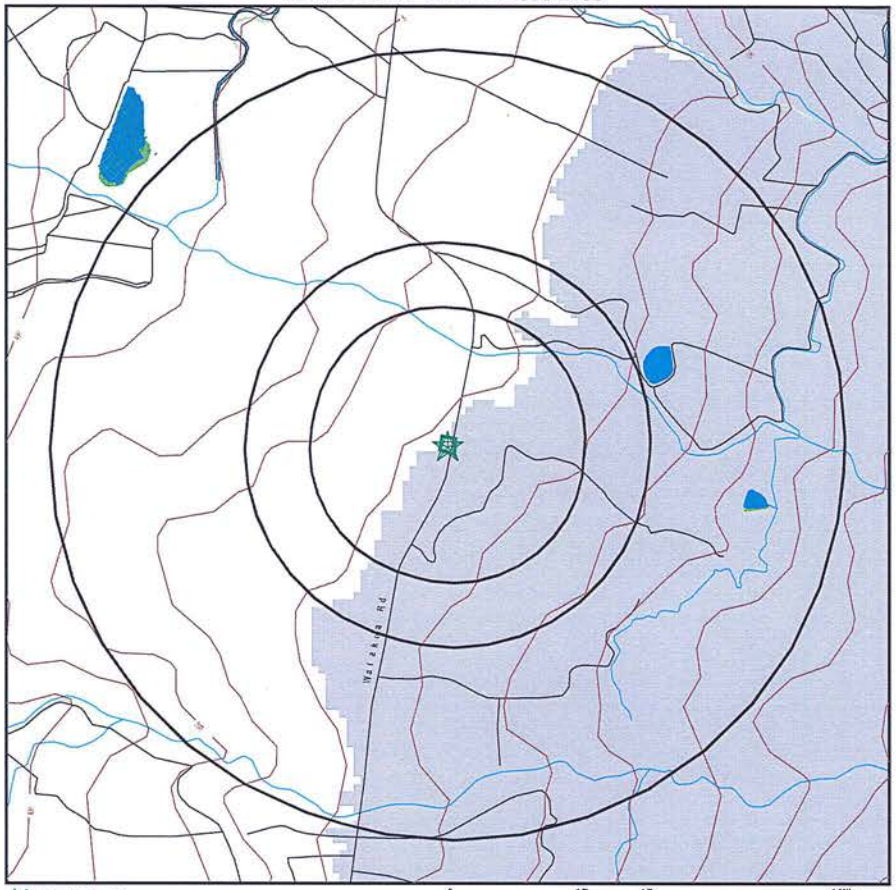
SECONDARY MAP - 4748534.16S



0 1/3 1/2 1 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Contour Lines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Upgradient Area

SITE NAME: Field 411 ADDRESS: Not Reported Kihei HI 96753 LAT/LONG: 20.802742 / 156.403207	CLIENT: Enviro Srvcs. and Trng. Center CONTACT: Sharla Nakashima INQUIRY #: 4748534.16s DATE: October 07, 2016 10:37 pm

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MAP FINDINGS

LEGEND

FACILITY NAME **FACILITY ADDRESS, CITY, ST, ZIP**			EDR SITE ID NUMBER
▼ MAP ID#	Direction Distance Range Relative Elevation	(Distance feet / miles) Feet Above Sea Level	ASTM 2600 Record Sources found in this report. Each database searched has been assigned to one or more categories. For detailed information about categorization, see the section of the report Records Searched and Currency.
Worksheet: **Comments:** Comments may be added on the online Vapor Encroachment Worksheet.			

DATABASE ACRONYM: Applicable categories (A hoverbox with database description).

RECORD SOURCES AND CURRENCY

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

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

STANDARD ENVIRONMENTAL RECORDS

PRP: Potentially Responsible Parties
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013 — Source: EPA
Number of Days to Update: 3 — Telephone: 202-564-6023
Last EDR Contact :08/12/2016

RMP: Risk Management Plans
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 05/01/2016 — Source: Environmental Protection Agency
Number of Days to Update: 99 — Telephone: 202-564-8600
Last EDR Contact :07/25/2016

AIRS: List of Permitted Facilities
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

A listing of permitted facilities in the state.

Date of Government Version: 04/14/2016 — Source: Department of Health
Number of Days to Update: 28 — Telephone: 808-586-4200
Last EDR Contact :09/29/2016

BROWNFIELDS: Brownfields Sites
Standard Environmental Record Source: State and tribal Brownfields sites
Search Distance: 0.333 Mile

With certain legal exclusions and additions, the term 'brownfield site' means real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.

Date of Government Version: 05/06/2016 — Source: Department of Health
Number of Days to Update: 69 — Telephone: 808-586-4249
Last EDR Contact :08/26/2016

CDL: Clandestine Drug Lab Listing
Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

A listing of clandestine drug lab site locations.

Date of Government Version: 08/04/2010 Source: Department of Health
Number of Days to Update: 42 Telephone: 808-586-4249
Last EDR Contact :09/26/2016

DRYCLEANERS: Permitted Drycleaner Facility Listing
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: 0.25 Mile

A listing of permitted drycleaner facilities in the state.

Date of Government Version: 01/20/2016 Source: Department of Health
Number of Days to Update: 28 Telephone: 808-586-4200
Last EDR Contact :10/03/2016

ENG CONTROLS: Engineering Control Sites
Standard Environmental Record Source: State and tribal institutional control / engineering control registries
Search Distance: Property

A listing of sites with engineering controls in place.

Date of Government Version: 05/06/2016 Source: Department of Health
Number of Days to Update: 69 Telephone: 404-586-4249
Last EDR Contact :08/26/2016

Financial Assurance: Financial Assurance Information Listing
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

A listing of financial assurance information for underground storage tank facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 06/21/2016 Source: Department of Health
Number of Days to Update: 39 Telephone: 808-586-4226
Last EDR Contact :09/26/2016

INST CONTROL: Sites with Institutional Controls
Standard Environmental Record Source: State and tribal institutional control / engineering control registries
Search Distance: Property

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

Date of Government Version: 05/06/2016 Source: Department of Health
Number of Days to Update: 69 Telephone: 808-586-4249
Last EDR Contact :08/26/2016

LUST: Leaking Underground Storage Tank Database
Standard Environmental Record Source: State and tribal leaking storage tank lists
Search Distance: 0.333 Mile

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

Date of Government Version: 01/13/2016 Source: Department of Health
Number of Days to Update: 47 Telephone: 808-586-4228
Last EDR Contact :08/31/2016

SHWS: Sites List
Standard Environmental Record Source: State and tribal - equivalent CERCLIS
Search Distance: 0.333 Mile

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

Date of Government Version: 05/06/2016 Source: Department of Health
Number of Days to Update: 69 Telephone: 808-586-4249
Last EDR Contact :08/26/2016

SPILLS: Release Notifications
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

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

Date of Government Version: 01/14/2016 Source: Department of Health
Number of Days to Update: 42 Telephone: 808-586-4249
Last EDR Contact :08/26/2016

SWF/LF: Permitted Landfills in the State of Hawaii
Standard Environmental Record Source: State and tribal landfill / solid waste disposal
Search Distance: 0.333 Mile

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

Date of Government Version: 09/17/2012 Source: Department of Health
Number of Days to Update: 37 Telephone: 808-586-4245
Last EDR Contact :09/30/2016

UIC: Underground Injection Wells Listing
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

A listing of underground injection well locations.

Date of Government Version: 02/07/2013 Source: Department of Health
Number of Days to Update: 56 Telephone: 808-586-4258
Last EDR Contact :08/24/2016

UST: Underground Storage Tank Database
Standard Environmental Record Source: State and tribal registered storage tank lists
Search Distance: Property

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

Date of Government Version: 01/13/2016 Source: Department of Health
Number of Days to Update: 47 Telephone: 808-586-4228

Last EDR Contact :08/31/2016

VCP: Voluntary Response Program Sites
Standard Environmental Record Source: State and tribal voluntary cleanup sites
Search Distance: 0.333 Mile

Sites participating in the Voluntary Response Program. The purpose of the VRP is to streamline the cleanup process in a way that will encourage prospective developers, lenders, and purchasers to voluntarily cleanup properties.

Date of Government Version: 05/06/2016 Source: Department of Health
Number of Days to Update: 69 Telephone: 808-586-4249
Last EDR Contact :08/26/2016

2020 COR ACTION: 2020 Corrective Action Program List
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: 0.25 Mile

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013 Source: Environmental Protection Agency
Number of Days to Update: 6 Telephone: 703-308-4044
Last EDR Contact :09/06/2016

COAL ASH DOE: Steam-Electric Plant Operation Data
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005 Source: Department of Energy
Number of Days to Update: 76 Telephone: 202-586-8719
Last EDR Contact :09/09/2016

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: 0.333 Mile

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014 Source: Environmental Protection Agency
Number of Days to Update: 40 Telephone: Not Reported
Last EDR Contact :09/06/2016

CONSENT: Superfund (CERCLA) Consent Decrees
Standard Environmental Record Source: Federal NPL
Search Distance: 0.333 Mile

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

Date of Government Version: 03/31/2016 Source: Department of Justice, Consent Decree Library
Number of Days to Update: 53 Telephone: Varies
Last EDR Contact :09/26/2016

RECORD SOURCES AND CURRENCY

CORRACTS: Corrective Action Report
Standard Environmental Record Source: Federal RCRA CORRACTS facilities list
Search Distance: 0.333 Mile

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 06/27/2016 Source: EPA
Number of Days to Update: 64 Telephone: 800-424-9346
Last EDR Contact :09/28/2016

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
Standard Environmental Record Source: State and tribal landfill / solid waste disposal
Search Distance: 0.333 Mile

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

Date of Government Version: 01/12/2009 Source: EPA, Region 9
Number of Days to Update: 137 Telephone: 415-947-4219
Last EDR Contact :07/20/2016

DOCKET HWC: Hazardous Waste Compliance Docket Listing
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 06/02/2016 Source: Environmental Protection Agency
Number of Days to Update: 91 Telephone: 202-564-0527
Last EDR Contact :08/24/2016

DOT OPS: Incident and Accident Data
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

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

Date of Government Version: 07/31/2012 Source: Department of Transporation, Office of Pipeline Safety
Number of Days to Update: 42 Telephone: 202-366-4595
Last EDR Contact :08/02/2016

Delisted NPL: National Priority List Deletions
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: 0.333 Mile

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

Date of Government Version: 03/07/2016 Source: EPA
Number of Days to Update: 10 Telephone: Not Reported
Last EDR Contact :10/05/2016

ECHO: Enforcement & Compliance History Information
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 09/20/2015
Number of Days to Update: 103
Last EDR Contact :09/20/2016
Source: Environmental Protection Agency
Telephone: 202-564-2280

EPA WATCH LIST: EPA WATCH LIST
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Number of Days to Update: 88
Last EDR Contact :08/08/2016
Source: Environmental Protection Agency
Telephone: 617-520-3000

ERNS: Emergency Response Notification System
Standard Environmental Record Source: Federal ERNS list
Search Distance: Property

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

Date of Government Version: 03/28/2016
Number of Days to Update: 51
Last EDR Contact :09/29/2016
Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180

FEMA UST: Underground Storage Tank Listing
Standard Environmental Record Source: State and tribal registered storage tank lists
Search Distance: Property

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Number of Days to Update: 55
Last EDR Contact :07/07/2016
Source: FEMA
Telephone: 202-646-5797

FINDS: Facility Index System/Facility Registry System
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

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

Date of Government Version: 07/20/2015
Number of Days to Update: 55
Last EDR Contact :09/07/2016
Source: EPA
Telephone: Not Reported

RECORD SOURCES AND CURRENCY

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

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

Date of Government Version: 04/09/2009
Number of Days to Update: 25
Last EDR Contact :08/17/2016
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Standard Environmental Record Source: Other Standard Environmental Records
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Number of Days to Update: 25
Last EDR Contact :08/17/2016
Source: EPA
Telephone: 202-566-1667

FUDS: Formerly Used Defense Sites
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: 0.333 Mile

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

Date of Government Version: 01/31/2015
Number of Days to Update: 97
Last EDR Contact :09/09/2016
Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285

FUELS PROGRAM: EPA Fuels Program Registered Listing
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 05/24/2016
Number of Days to Update: 49
Last EDR Contact :08/23/2016
Source: EPA
Telephone: 800-385-6164

FUSRAP: Formerly Utilized Sites Remedial Action Program
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: 0.333 Mile

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 07/21/2016
Number of Days to Update: 59
Last EDR Contact :07/26/2016
Source: Department of Energy
Telephone: 202-586-3559

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

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

Date of Government Version: 10/19/2006
Number of Days to Update: 40
Last EDR Contact :12/17/2007
Source: Environmental Protection Agency
Telephone: 202-564-2501

HMIRS: Hazardous Materials Information Reporting System
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

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

Date of Government Version: 06/27/2016
Number of Days to Update: 87
Last EDR Contact :09/27/2016
Source: U.S. Department of Transportation
Telephone: 202-366-4555

ICIS: Integrated Compliance Information System
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

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

Date of Government Version: 01/23/2015
Number of Days to Update: 31
Last EDR Contact :07/07/2016
Source: Environmental Protection Agency
Telephone: 202-564-5088

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal leaking storage tank lists
Search Distance: 0.333 Mile

A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/27/2015
Number of Days to Update: 67
Last EDR Contact :07/29/2016
Source: EPA Region 1
Telephone: 617-918-1313

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal leaking storage tank lists
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 01/07/2016
Number of Days to Update: 41
Last EDR Contact :07/27/2016
Source: EPA Region 10
Telephone: 206-553-2857

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal leaking storage tank lists
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 02/05/2016
Source: EPA Region 4

Number of Days to Update: 35
Last EDR Contact :07/26/2016
Telephone: 404-562-8677

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal leaking storage tank lists
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 02/17/2016
Number of Days to Update: 37
Last EDR Contact :07/27/2016
Source: EPA, Region 5
Telephone: 312-886-7439

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal leaking storage tank lists
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 12/11/2015
Number of Days to Update: 105
Last EDR Contact :07/27/2016
Source: EPA Region 6
Telephone: 214-665-6597

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal leaking storage tank lists
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 10/09/2015
Number of Days to Update: 112
Last EDR Contact :07/27/2016
Source: EPA Region 7
Telephone: 913-551-7003

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal leaking storage tank lists
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/13/2015
Number of Days to Update: 118
Last EDR Contact :07/27/2016
Source: EPA Region 8
Telephone: 303-312-6271

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal leaking storage tank lists
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 02/25/2016
Number of Days to Update: 37
Last EDR Contact :07/27/2016
Source: Environmental Protection Agency
Telephone: 415-972-3372

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: 0.333 Mile

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Number of Days to Update: 52
Last EDR Contact :08/05/2016
Source: Environmental Protection Agency
Telephone: 703-308-8245

INDIAN UST R1: Underground Storage Tanks on Indian Land

Standard Environmental Record Source: State and tribal registered storage tank lists
Search Distance: Property

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/20/2015 Source: EPA, Region 1
Number of Days to Update: 67 Telephone: 617-918-1313
Last EDR Contact :07/29/2016

INDIAN UST R10: Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal registered storage tank lists
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 01/07/2016 Source: EPA Region 10
Number of Days to Update: 41 Telephone: 206-553-2857
Last EDR Contact :07/27/2016

INDIAN UST R4: Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal registered storage tank lists
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 02/05/2016 Source: EPA Region 4
Number of Days to Update: 35 Telephone: 404-562-9424
Last EDR Contact :07/26/2016

INDIAN UST R5: Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal registered storage tank lists
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 11/05/2015 Source: EPA Region 5
Number of Days to Update: 52 Telephone: 312-886-6136
Last EDR Contact :07/27/2016

INDIAN UST R6: Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal registered storage tank lists
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 12/03/2015 Source: EPA Region 6
Number of Days to Update: 120 Telephone: 214-665-7591
Last EDR Contact :07/27/2016

INDIAN UST R7: Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal registered storage tank lists
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/23/2014 Source: EPA Region 7
Number of Days to Update: 65 Telephone: 913-551-7003
Last EDR Contact :07/27/2016

INDIAN UST R8: Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal registered storage tank lists
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 01/26/2016 Source: EPA Region 8
Number of Days to Update: 119 Telephone: 303-312-6137
Last EDR Contact :07/27/2016

INDIAN UST R9: Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal registered storage tank lists
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 02/25/2016 Source: EPA Region 9
Number of Days to Update: 37 Telephone: 415-972-3368
Last EDR Contact :07/27/2016

INDIAN VCP R1: Voluntary Cleanup Priority Listing
Standard Environmental Record Source: State and tribal voluntary cleanup sites
Search Distance: Property

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015 Source: EPA, Region 1
Number of Days to Update: 142 Telephone: 617-918-1102
Last EDR Contact :09/26/2016

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
Standard Environmental Record Source: State and tribal voluntary cleanup sites
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008 Source: EPA, Region 7
Number of Days to Update: 27 Telephone: 913-551-7365
Last EDR Contact :04/20/2009

LEAD SMELTER 1: Lead Smelter Sites
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

A listing of former lead smelter site locations.

Date of Government Version: 03/07/2016 Source: Environmental Protection Agency
Number of Days to Update: 148 Telephone: 703-603-8787
Last EDR Contact :09/29/2016

LEAD SMELTER 2: Lead Smelter Sites
Standard Environmental Record Source: Other Standard Environmental Records
A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001 Source: American Journal of Public Health
Number of Days to Update: 36 Telephone: 703-305-6451
Last EDR Contact :12/02/2009

LIENS 2: CERCLA Lien Information

Standard Environmental Record Source: Federal CERCLIS

Search Distance: Property

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

Date of Government Version: 02/18/2014
Number of Days to Update: 37
Last EDR Contact :07/29/2016

Source: Environmental Protection Agency
Telephone: 202-564-6023

LUCIS: Land Use Control Information System

Standard Environmental Record Source: Federal institutional controls / engineering controls registries

Search Distance: 0.333 Mile

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

Date of Government Version: 05/28/2015
Number of Days to Update: 13
Last EDR Contact :08/12/2016

Source: Department of the Navy
Telephone: 843-820-7326

MLTS: Material Licensing Tracking System

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

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

Date of Government Version: 03/07/2016
Number of Days to Update: 28
Last EDR Contact :09/05/2016

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169

NPL: National Priority List

Standard Environmental Record Source: Federal NPL

Search Distance: 0.333 Mile

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

Date of Government Version: 03/07/2016
Number of Days to Update: 10
Last EDR Contact :10/05/2016

Source: EPA
Telephone: Not Reported

NPL Site Boundaries

Sources:

EPA"s Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-566-0690

EPA Region 1
Telephone: 617-918-1102

EPA Region 2
Telephone: 212-637-4293

EPA Region 3
Telephone: 215-814-5418

EPA Region 4
Telephone: 404-562-8681

EPA Region 5
Telephone: 312-353-1063

EPA Region 6
Telephone: 214-655-6659

EPA Region 7
Telephone: 913-551-7247

EPA Region 8
Telephone: 303-312-6118

EPA Region 9
Telephone: 415-947-4579

EPA Region 10
Telephone: 206-553-4479

NPL LIENS: Federal Superfund Liens

Standard Environmental Record Source: Federal NPL

Search Distance: Property

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

Date of Government Version: 10/15/1991
Number of Days to Update: 56
Last EDR Contact :08/15/2011

Source: EPA
Telephone: 202-564-4267

ODI: Open Dump Inventory

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: 0.333 Mile

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

Date of Government Version: 06/30/1985
Number of Days to Update: 39
Last EDR Contact :06/09/2004

Source: Environmental Protection Agency
Telephone: 800-424-9346

PADS: PCB Activity Database System

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

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

Date of Government Version: 01/20/2016
Number of Days to Update: 127
Last EDR Contact :07/15/2016

Source: EPA
Telephone: 202-566-0500

PCB TRANSFORMER: PCB Transformer Registration Database

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Number of Days to Update: 83
Last EDR Contact :07/29/2016
Source: Environmental Protection Agency
Telephone: 202-566-0517

Proposed NPL: Proposed National Priority List Sites
Standard Environmental Record Source: Federal NPL
Search Distance: 0.333 Mile

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

Date of Government Version: 03/07/2016
Number of Days to Update: 10
Last EDR Contact :10/05/2016
Source: EPA
Telephone: Not Reported

RAATS: RCRA Administrative Action Tracking System
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

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

Date of Government Version: 04/17/1995
Number of Days to Update: 35
Last EDR Contact :06/02/2008
Source: EPA
Telephone: 202-564-4104

RADINFO: Radiation Information Database
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

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

Date of Government Version: 07/07/2015
Number of Days to Update: 69
Last EDR Contact :10/05/2016
Source: Environmental Protection Agency
Telephone: 202-343-9775

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

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

Date of Government Version: 06/21/2016
Number of Days to Update: 64
Last EDR Contact :09/28/2016
Source: Environmental Protection Agency
Telephone: 703-308-8895

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators
Standard Environmental Record Source: Federal RCRA generators list
Search Distance: Property

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

Date of Government Version: 06/21/2016
Number of Days to Update: 64
Last EDR Contact :09/28/2016
Source: Environmental Protection Agency
Telephone: 703-308-8895

RCRA-LQG: RCRA - Large Quantity Generators
Standard Environmental Record Source: Federal RCRA generators list
Search Distance: Property

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

Date of Government Version: 06/21/2016
Number of Days to Update: 64
Last EDR Contact :09/28/2016
Source: Environmental Protection Agency
Telephone: 703-308-8895

RCRA-SQG: RCRA - Small Quantity Generators
Standard Environmental Record Source: Federal RCRA generators list
Search Distance: Property

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

Date of Government Version: 06/21/2016
Number of Days to Update: 64
Last EDR Contact :09/28/2016
Source: Environmental Protection Agency
Telephone: 703-308-8895

RCRA-TSDF: RCRA - Treatment, Storage and Disposal
Standard Environmental Record Source: Federal RCRA TSD facilities list
Search Distance: 0.333 Mile

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

Date of Government Version: 06/21/2016
Number of Days to Update: 64
Last EDR Contact :09/28/2016
Source: Environmental Protection Agency
Telephone: 703-308-8895

ROD: Records Of Decision
Standard Environmental Record Source: Federal NPL
Search Distance: 0.333 Mile

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

Date of Government Version: 11/25/2013
Source: EPA

Number of Days to Update: 74 Telephone: 703-416-0223
Last EDR Contact :09/09/2016

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: 0.333 Mile

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

Date of Government Version: 03/07/2011 Source: Environmental Protection Agency
Number of Days to Update: 54 Telephone: 615-532-8599
Last EDR Contact :08/15/2016

SEMS: Superfund Enterprise Management System
Standard Environmental Record Source: Federal CERCLIS
Search Distance: 0.333 Mile

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 03/07/2016 Source: EPA
Number of Days to Update: 10 Telephone: 800-424-9346
Last EDR Contact :07/22/2016

SEMS-ARCHIVE: Superfund Enterprise Management System Archive
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: 0.333 Mile

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 03/07/2016 Source: EPA
Number of Days to Update: 10 Telephone: 800-424-9346
Last EDR Contact :07/22/2016

SSTS: Section 7 Tracking Systems
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

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

Date of Government Version: 12/31/2009 Source: EPA
Number of Days to Update: 77 Telephone: 202-564-4203

Last EDR Contact :07/25/2016

TRIS: Toxic Chemical Release Inventory System
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

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

Date of Government Version: 12/31/2014 Source: EPA
Number of Days to Update: 133 Telephone: 202-566-0250
Last EDR Contact :08/26/2016

TSCA: Toxic Substances Control Act
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

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

Date of Government Version: 12/31/2012 Source: EPA
Number of Days to Update: 14 Telephone: 202-260-5521
Last EDR Contact :09/23/2016

UMTRA: Uranium Mill Tailings Sites
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: 0.333 Mile

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

Date of Government Version: 09/14/2010 Source: Department of Energy
Number of Days to Update: 146 Telephone: 505-845-0011
Last EDR Contact :09/09/2016

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/20/2015 Source: EPA
Number of Days to Update: 69 Telephone: 202-564-2496
Last EDR Contact :09/26/2016

US AIRS MINOR: Air Facility System Data
Standard Environmental Record Source: Other Standard Environmental Records
A listing of minor source facilities.

Date of Government Version: 10/20/2015 Source: EPA
Number of Days to Update: 69 Telephone: 202-564-2496

Last EDR Contact :09/26/2016

US BROWNFIELDS: A Listing of Brownfields Sites

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: 0.333 Mile

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/21/2016
Number of Days to Update: 72
Last EDR Contact :09/21/2016

Source: Environmental Protection Agency
Telephone: 202-566-2777

US CDL: Clandestine Drug Labs

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

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

Date of Government Version: 08/30/2016
Number of Days to Update: 17
Last EDR Contact :08/31/2016

Source: Drug Enforcement Administration
Telephone: 202-307-1000

US ENG CONTROLS: Engineering Controls Sites List

Standard Environmental Record Source: Federal institutional controls / engineering controls registries

Search Distance: Property

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

Date of Government Version: 05/09/2016
Number of Days to Update: 93
Last EDR Contact :08/31/2016

Source: Environmental Protection Agency
Telephone: 703-603-0695

US FIN ASSUR: Financial Assurance Information

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 05/08/2016
Number of Days to Update: 107
Last EDR Contact :08/17/2016

Source: Environmental Protection Agency
Telephone: 202-566-1917

US HIST CDL: National Clandestine Laboratory Register

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 08/31/2016
Number of Days to Update: 17
Last EDR Contact :08/31/2016

Source: Drug Enforcement Administration
Telephone: 202-307-1000

US INST CONTROL: Sites with Institutional Controls

Standard Environmental Record Source: Federal institutional controls / engineering controls registries

Search Distance: Property

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

Date of Government Version: 05/09/2016
Number of Days to Update: 93
Last EDR Contact :08/31/2016

Source: Environmental Protection Agency
Telephone: 703-603-0695

US MINES: Mines Master Index File

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

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

Date of Government Version: 08/05/2016
Number of Days to Update: 22
Last EDR Contact :09/01/2016

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959

DOD: Department of Defense Sites

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: 0.333 Mile

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

Date of Government Version: 12/31/2005
Number of Days to Update: 62
Last EDR Contact :07/15/2016

Source: USGS
Telephone: 888-275-8747

INDIAN RESERV: Indian Reservations

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Number of Days to Update: 34
Last EDR Contact :07/15/2016

Source: USGS
Telephone: 202-208-3710

PWS: Public Water System Data

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

RECORD SOURCES AND CURRENCY

This Safe Drinking Water Information System (SDWIS) file contains public water systems name and address, population served and the primary source of water

Date of Government Version: 12/17/2013
Number of Days to Update: 279
Last EDR Contact :08/29/2016

Source: EPA
Telephone: Not Reported

RECORD SOURCES AND CURRENCY

HISTORICAL USE RECORDS

RGA HWS: Recovered Government Archive State Hazardous Waste Facilities List
Standard Environmental Record Source: Exclusive Recovered Govt. Archives
Search Distance: Property

The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

Date of Government Version: Not Reported
Number of Days to Update: 191
Last EDR Contact :06/01/2012

Source: Department of Health
Telephone: Not Reported

RGA LF: Recovered Government Archive Solid Waste Facilities List
Standard Environmental Record Source: Exclusive Recovered Govt. Archives
Search Distance: Property

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

Date of Government Version: Not Reported
Number of Days to Update: 200
Last EDR Contact :06/01/2012

Source: Department of Health
Telephone: Not Reported

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank
Standard Environmental Record Source: Exclusive Recovered Govt. Archives
Search Distance: Property

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

Date of Government Version: Not Reported
Number of Days to Update: 186
Last EDR Contact :06/01/2012

Source: Department of Health
Telephone: Not Reported

EDR Hist Auto: EDR Exclusive Historic Gas Stations
Standard Environmental Record Source: Historical Gas Stations
Search Distance: 0.125 Mile

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: 02/20/2007
Number of Days to Update: 42
Last EDR Contact :02/21/2007

Source: EDR, Inc.
Telephone: Not Reported

EDR Hist Cleaner: EDR Exclusive Historic Dry Cleaners
Standard Environmental Record Source: Historical Dry Cleaners
Search Distance: 0.125 Mile

RECORD SOURCES AND CURRENCY

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: 02/20/2007
Number of Days to Update: 42
Last EDR Contact :02/21/2007

Source: EDR, Inc.
Telephone: Not Reported

EDR MGP: EDR Proprietary Manufactured Gas Plants

Standard Environmental Record Source: Former manufactured Gas Plants
Search Distance: 0.333 Mile

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: 08/28/2009
Number of Days to Update: 55
Last EDR Contact :11/30/2012

Source: EDR, Inc.
Telephone: Not Reported

RECORD SOURCES AND CURRENCY

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5' minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW® Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW® Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services. The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

STREET AND ADDRESS INFORMATION

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Fields 501/502 and 604
LANA ST
Kihei, HI 96753

Inquiry Number: 4748534.7s
October 7, 2016

EDR Vapor Encroachment Screen

Prepared using EDR's Vapor Encroachment Worksheet

EDR® Environmental Data Resources Inc

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Shelton, CT 06484
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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of the ASTM Standard Practice for Assessment of Vapor Encroachment into Structures on Property Involved in Real Estate Transactions (E 2600).

		Summary		
STANDARD ENVIRONMENTAL RECORDS	**Maximum Search Distance***	property	1/10	1/10 - 1/3
Federal NPL	0.333	0	0	0
Federal CERCLIS	0.333	0	0	0
Federal RCRA CORRACTS facilities list	0.333	0	0	0
Federal RCRA TSD facilities list	0.333	0	0	0
Federal RCRA generators list	property	0	-	-
Federal institutional controls / engineering controls registries	0.333	0	0	0
Federal ERNS list	property	0	-	-
State and tribal - equivalent NPL	not searched	-	-	-
State and tribal - equivalent CERCLIS	0.333	0	0	0
State and tribal landfill / solid waste disposal	0.333	0	0	0
State and tribal leaking storage tank lists	0.333	0	1	0
State and tribal registered storage tank lists	property	0	-	-
State and tribal institutional control / engineering control registries	property	0	-	-
State and tribal voluntary cleanup sites	0.333	0	0	0
State and tribal Brownfields sites	0.333	0	0	0
Other Standard Environmental Records	0.333	0	0	0

HISTORICAL USE RECORDS				
Former manufactured Gas Plants	0.333	0	0	0
Historical Gas Stations	0.125	0	0	0
Historical Dry Cleaners	0.125	0	0	0
Exclusive Recovered Govt. Archives	property	0	-	-

*Each category may include several separate databases, each having a different search distance. For each category, the table reports the maximum search distance applied. See the section 'Record Sources and Currency' for information on individual databases.

EXECUTIVE SUMMARY

TARGET PROPERTY INFORMATION

ADDRESS

FIELDS 501/502 AND 604
LANA ST
KIHEI, HI 96753

COORDINATES

Latitude (North):	20.87694 - 20° 52' 36.983185"
Longitude (West):	156.406109 - 156° 24' 22.005615"
Elevation:	190 ft. above sea level

EXECUTIVE SUMMARY

PHYSICAL SETTING INFORMATION

Flood Zone:	Available
NWI Wetlands:	Available

AQUIFLOW®

Search Radius: 0.333 Mile.

No Aquiflow sites reported.

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name:	Keahua
Soil Surface Texture:	silty clay loam
Hydrologic Group:	Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.
Soil Drainage Class:	Well drained
Hydric Status:	Not hydric
Corrosion Potential - Uncoated Steel:	Low
Depth to Bedrock Min:	> 0 inches
Depth to Watertable Min:	> 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	CL-K (proposed)	Max: 42 Min: 4.23	Max: 6.5 Min: 6.1

EXECUTIVE SUMMARY

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	9 inches	33 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	CL-K (proposed)	Max: 14.11 Min: 1.41	Max: 6.5 Min: 6.1
3	33 inches	61 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	CL-K (proposed)	Max: 4.23 Min: 1.41	Max: 7.3 Min: 6.6
4	61 inches	70 inches	very gravelly clay loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14.11 Min: 1.41	Max: 7.3 Min: 6.6

Soil Map ID: 2

Soil Component Name:	Keahua
Soil Surface Texture:	silty clay loam
Hydrologic Group:	Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.
Soil Drainage Class:	Well drained
Hydric Status:	Not hydric
Corrosion Potential - Uncoated Steel:	Low
Depth to Bedrock Min:	> 0 inches
Depth to Watertable Min:	> 0 inches

EXECUTIVE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 42 Min: 4.23	Max: 6.5 Min: 6.1
2	9 inches	33 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 1.41	Max: 6.5 Min: 6.1
3	33 inches	61 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 4.23 Min: 1.41	Max: 7.3 Min: 6.6
4	61 inches	70 inches	very gravelly clay loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 1.41	Max: 7.3 Min: 6.6

Soil Map ID: 3

Soil Component Name: Molokai

Soil Surface Texture: silty clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

EXECUTIVE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	14 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 4.23	Max: 7.8 Min: 6.6
2	14 inches	72 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 4.23 Min: 1.41	Max: 7.8 Min: 6.6

Soil Map ID: 4

Soil Component Name: Molokai

Soil Surface Texture: silty clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	14 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 4.23	Max: 7.8 Min: 6.6

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	14 inches	72 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 4.23 Min: 1.41	Max: 7.8 Min: 6.6

Soil Map ID: 5

Soil Component Name: Water > 40 acres

Soil Surface Texture: silty clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class:
Hydric Status: Unknown

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

No Layer Information available.

Soil Map ID: 6

Soil Component Name: Waiakoa

Soil Surface Texture: cobbly silty clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 84 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	1 inches	cobbly silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 4.23	Max: 7.3 Min: 6.6
2	1 inches	25 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 4.23	Max: 7.3 Min: 6.1
3	25 inches	33 inches	stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 42.34 Min: 4.23	Max: 8.4 Min: 7.4
4	33 inches	37 inches	bedrock	Not reported	Not reported	Max: 0.42 Min: 0.02	Max: Min:

Soil Map ID: 7

Soil Component Name: Molokai

Soil Surface Texture: silty clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

EXECUTIVE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	14 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 4.23	Max: 7.8 Min: 6.6
2	14 inches	72 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 4.23 Min: 1.41	Max: 7.8 Min: 6.6

Soil Map ID: 8

Soil Component Name: Waiakoa

Soil Surface Texture: silty clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 84 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	1 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 4.23	Max: 7.3 Min: 6.6

EXECUTIVE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	1 inches	25 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 4.23	Max: 7.3 Min: 6.1
3	25 inches	33 inches	stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 42.34 Min: 4.23	Max: 8.4 Min: 7.4
4	33 inches	37 inches	bedrock	Not reported	Not reported	Max: 0.42 Min: 0.02	Max: Min:

Soil Map ID: 9

Soil Component Name: Waiakoa

Soil Surface Texture: silty clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 84 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	1 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 4.23	Max: 7.3 Min: 6.6

EXECUTIVE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	1 inches	25 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 4.23	Max: 7.3 Min: 6.1
3	25 inches	33 inches	stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 42.34 Min: 4.23	Max: 8.4 Min: 7.4
4	33 inches	37 inches	bedrock	Not reported	Not reported	Max: 0.42 Min: 0.02	Max: Min:

Soil Map ID: 10

Soil Component Name: Ewa

Soil Surface Texture: silty clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	18 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 4.23	Max: 7.8 Min: 6.6

EXECUTIVE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	18 inches	59 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 4.23	Max: 7.8 Min: 6.6

EXECUTIVE SUMMARY

SEARCH RESULTS

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

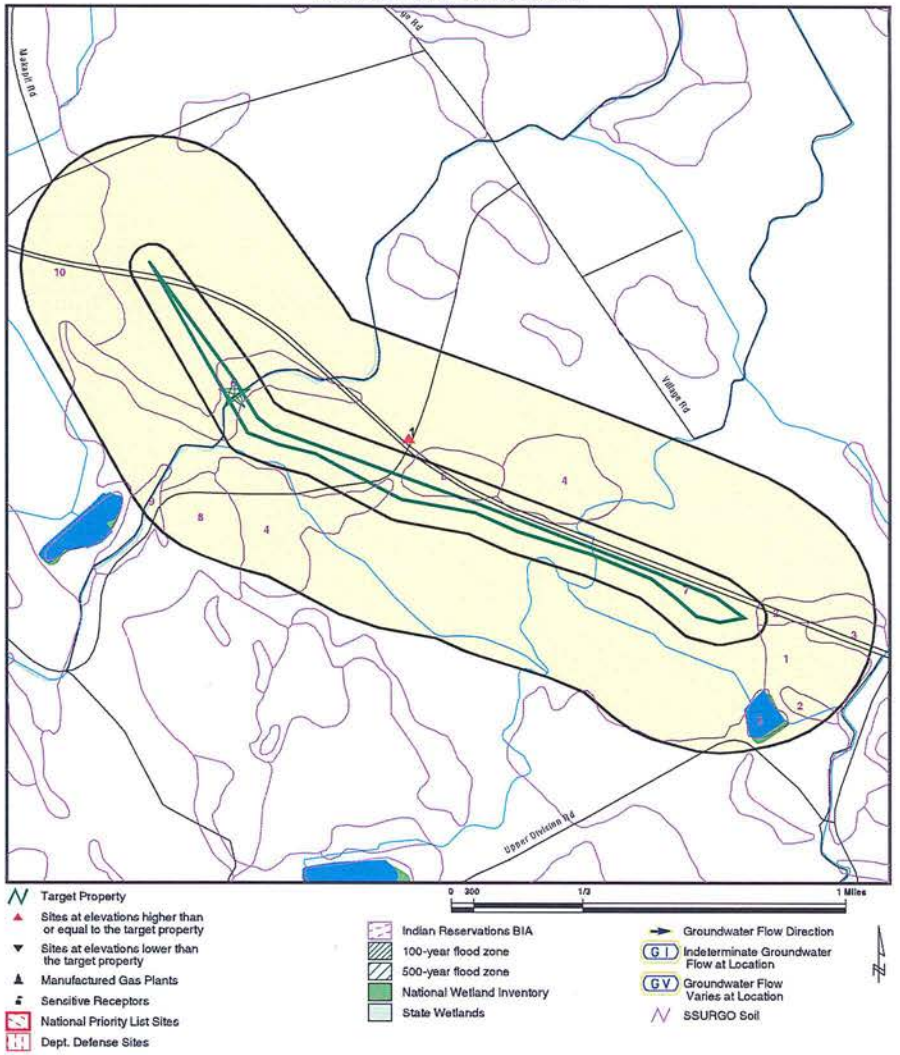
STANDARD ENVIRONMENTAL RECORDS

Name	Address	Dist/Dir	Map ID	Page
ROJAC TRUCKING	591 HALEAKALA HWY	<1/10 ESE	▲1	17
UST: State and tribal registered storage tank lists LUST: State and tribal leaking storage tank lists				

HISTORICAL USE RECORDS

Name	Address	Dist/Dir	Map ID	Page
Not Reported				

PRIMARY MAP - 4748534.7S



SITE NAME:	Fields 501/502 and 604	CLIENT:	Enviro Srvcs. and Trng. Center
ADDRESS:	LANA ST Kihei HI 96753	CONTACT:	Sharla Nakashima
LAT/LONG:	20.87694 / 156.406109	INQUIRY #:	4748534.7s
		DATE:	October 07, 2016 10:37 pm

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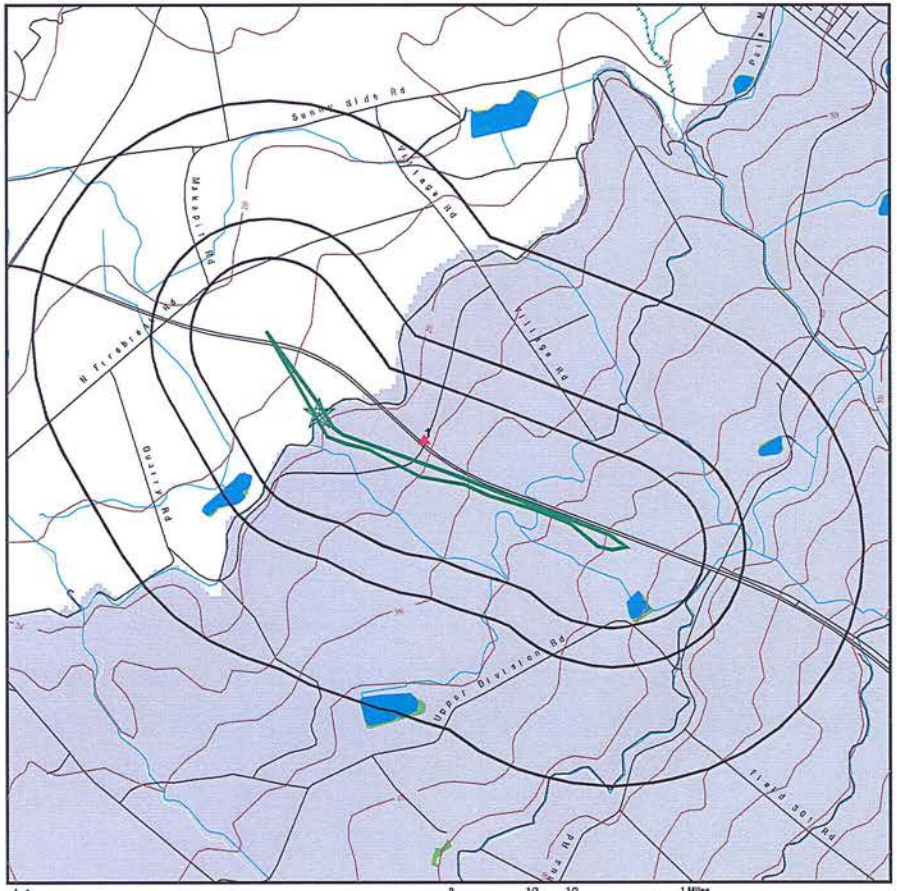
SECONDARY MAP - 4748534.7S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Contour Lines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Upgradient Area

SITE NAME: Fields 501/502 and 604	CLIENT: Enviro Srvcs. and Trng. Center
ADDRESS: LANA ST Kihei HI 96753	CONTACT: Sharla Nakashima
LAT/LONG: 20.87694 / 156.406109	INQUIRY #: 4748534.7s DATE: October 07, 2016 10:37 pm

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MAP FINDINGS

LEGEND

FACILITY NAME FACILITY ADDRESS, CITY, ST, ZIP			EDR SITE ID NUMBER
▼ MAP ID#	Direction Distance Range Relative Elevation	(Distance feet / miles) Feet Above Sea Level	ASTM 2600 Record Sources found in this report. Each database searched has been assigned to one or more categories. For detailed information about categorization, see the section of the report Records Searched and Currency.
Worksheet:			
Comments: Comments may be added on the online Vapor Encroachment Worksheet.			

DATABASE ACRONYM: Applicable categories (A hoverbox with database description).

ROJAC TRUCKING 591 HALEAKALA HWY, PAIA, HI, 96779			U003155141
▲ 1	ESE <1/10	(479 ft. / 0.091 mi.)	State and tribal leaking storage tank lists State and tribal registered storage tank lists
	50 ft. Higher Elevation	240 ft. Above Sea Level	

Worksheet:

UST: State and tribal registered storage tank lists

Facility ID:	9-503008
Owner:	A & B PROPERTIES, INC.
Owner Address:	822 BISHOP ST
Owner City,St,Zip:	Paia, 96779 96779
Latitude:	20.875148
Longitude:	-156.399295
Horizontal Reference Datum Name:	NAD83
Horizontal Collection Method Name:	Zip Code
Tank ID:	R-1
Date Installed:	Not Reported
Tank Status:	**Permanently Out of Use**
Date Closed:	02/02/1995
Tank Capacity:	2000
Substance:	Gasoline

LUST: State and tribal leaking storage tank lists

Facility ID:	9-503008
Facility Status:	Site Cleanup Completed (NFA)
Facility Status Date:	07/12/2001
Release ID:	950051
Project Officer:	Mark Sutterfield

MAP FINDINGS

RECORD SOURCES AND CURRENCY

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

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

STANDARD ENVIRONMENTAL RECORDS

PRP: Potentially Responsible Parties
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Number of Days to Update: 3
Last EDR Contact :08/12/2016
Source: EPA
Telephone: 202-564-6023

RMP: Risk Management Plans
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 05/01/2016
Number of Days to Update: 99
Last EDR Contact :07/25/2016
Source: Environmental Protection Agency
Telephone: 202-564-8600

AIRS: List of Permitted Facilities
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

A listing of permitted facilities in the state.

Date of Government Version: 04/14/2016
Number of Days to Update: 28
Last EDR Contact :09/29/2016
Source: Department of Health
Telephone: 808-586-4200

BROWNFIELDS: Brownfields Sites
Standard Environmental Record Source: State and tribal Brownfields sites
Search Distance: 0.333 Mile

With certain legal exclusions and additions, the term 'brownfield site' means real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.

Date of Government Version: 05/06/2016
Number of Days to Update: 69
Last EDR Contact :08/26/2016
Source: Department of Health
Telephone: 808-586-4249

CDL: Clandestine Drug Lab Listing
Standard Environmental Record Source: Other Standard Environmental Records

RECORD SOURCES AND CURRENCY

Search Distance: Property

A listing of clandestine drug lab site locations.

Date of Government Version: 08/04/2010
Number of Days to Update: 42
Last EDR Contact :09/26/2016

Source: Department of Health
Telephone: 808-586-4249

DRYCLEANERS: Permitted Drycleaner Facility Listing
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: 0.25 Mile

A listing of permitted drycleaner facilities in the state.

Date of Government Version: 01/20/2016
Number of Days to Update: 28
Last EDR Contact :10/03/2016

Source: Department of Health
Telephone: 808-586-4200

ENG CONTROLS: Engineering Control Sites
Standard Environmental Record Source: State and tribal institutional control / engineering control registries
Search Distance: Property

A listing of sites with engineering controls in place.

Date of Government Version: 05/06/2016
Number of Days to Update: 69
Last EDR Contact :08/26/2016

Source: Department of Health
Telephone: 404-586-4249

Financial Assurance: Financial Assurance Information Listing
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

A listing of financial assurance information for underground storage tank facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 06/21/2016
Number of Days to Update: 39
Last EDR Contact :09/26/2016

Source: Department of Health
Telephone: 808-586-4226

INST CONTROL: Sites with Institutional Controls
Standard Environmental Record Source: State and tribal institutional control / engineering control registries
Search Distance: Property

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

Date of Government Version: 05/06/2016
Number of Days to Update: 69
Last EDR Contact :08/26/2016

Source: Department of Health
Telephone: 808-586-4249

LUST: Leaking Underground Storage Tank Database
Standard Environmental Record Source: State and tribal leaking storage tank lists
Search Distance: 0.333 Mile

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

RECORD SOURCES AND CURRENCY

Date of Government Version: 01/13/2016
Number of Days to Update: 47
Last EDR Contact :08/31/2016

Source: Department of Health
Telephone: 808-586-4228

SHWS: Sites List
Standard Environmental Record Source: State and tribal - equivalent CERCLIS
Search Distance: 0.333 Mile

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

Date of Government Version: 05/06/2016
Number of Days to Update: 69
Last EDR Contact :08/26/2016

Source: Department of Health
Telephone: 808-586-4249

SPILLS: Release Notifications
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

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

Date of Government Version: 01/14/2016
Number of Days to Update: 42
Last EDR Contact :08/26/2016

Source: Department of Health
Telephone: 808-586-4249

SWF/LF: Permitted Landfills in the State of Hawaii
Standard Environmental Record Source: State and tribal landfill / solid waste disposal
Search Distance: 0.333 Mile

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

Date of Government Version: 09/17/2012
Number of Days to Update: 37
Last EDR Contact :09/30/2016

Source: Department of Health
Telephone: 808-586-4245

UIC: Underground Injection Wells Listing
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

A listing of underground injection well locations.

Date of Government Version: 02/07/2013
Number of Days to Update: 56
Last EDR Contact :08/24/2016

Source: Department of Health
Telephone: 808-586-4258

UST: Underground Storage Tank Database
Standard Environmental Record Source: State and tribal registered storage tank lists
Search Distance: Property

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

Date of Government Version: 01/13/2016
Number of Days to Update: 47

Source: Department of Health
Telephone: 808-586-4228

Last EDR Contact :08/31/2016

VCP: Voluntary Response Program Sites
Standard Environmental Record Source: State and tribal voluntary cleanup sites
Search Distance: 0.333 Mile

Sites participating in the Voluntary Response Program. The purpose of the VRP is to streamline the cleanup process in a way that will encourage prospective developers, lenders, and purchasers to voluntarily cleanup properties.

Date of Government Version: 05/06/2016 Source: Department of Health
Number of Days to Update: 69 Telephone: 808-586-4249
Last EDR Contact :08/26/2016

2020 COR ACTION: 2020 Corrective Action Program List
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: 0.25 Mile

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013 Source: Environmental Protection Agency
Number of Days to Update: 6 Telephone: 703-308-4044
Last EDR Contact :09/06/2016

COAL ASH DOE: Steam-Electric Plant Operation Data
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005 Source: Department of Energy
Number of Days to Update: 76 Telephone: 202-586-8719
Last EDR Contact :09/09/2016

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: 0.333 Mile

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014 Source: Environmental Protection Agency
Number of Days to Update: 40 Telephone: Not Reported
Last EDR Contact :09/06/2016

CONSENT: Superfund (CERCLA) Consent Decrees
Standard Environmental Record Source: Federal NPL
Search Distance: 0.333 Mile

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

Date of Government Version: 03/31/2016 Source: Department of Justice, Consent Decree Library
Number of Days to Update: 53 Telephone: Varies
Last EDR Contact :09/26/2016

RECORD SOURCES AND CURRENCY

CORRACTS: Corrective Action Report
Standard Environmental Record Source: Federal RCRA CORRACTS facilities list
Search Distance: 0.333 Mile

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 06/27/2016 Source: EPA
Number of Days to Update: 64 Telephone: 800-424-9346
Last EDR Contact :09/28/2016

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
Standard Environmental Record Source: State and tribal landfill / solid waste disposal
Search Distance: 0.333 Mile

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

Date of Government Version: 01/12/2009 Source: EPA, Region 9
Number of Days to Update: 137 Telephone: 415-947-4219
Last EDR Contact :07/20/2016

DOCKET HWC: Hazardous Waste Compliance Docket Listing
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 06/02/2016 Source: Environmental Protection Agency
Number of Days to Update: 91 Telephone: 202-564-0527
Last EDR Contact :08/24/2016

DOT OPS: Incident and Accident Data
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

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

Date of Government Version: 07/31/2012 Source: Department of Transporation, Office of Pipeline Safety
Number of Days to Update: 42 Telephone: 202-366-4595
Last EDR Contact :08/02/2016

Delisted NPL: National Priority List Deletions
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: 0.333 Mile

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

Date of Government Version: 03/07/2016 Source: EPA
Number of Days to Update: 10 Telephone: Not Reported
Last EDR Contact :10/05/2016

ECHO: Enforcement & Compliance History Information
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 09/20/2015
Number of Days to Update: 103
Last EDR Contact :09/20/2016
Source: Environmental Protection Agency
Telephone: 202-564-2280

EPA WATCH LIST: EPA WATCH LIST
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Number of Days to Update: 88
Last EDR Contact :08/08/2016
Source: Environmental Protection Agency
Telephone: 617-520-3000

ERNS: Emergency Response Notification System
Standard Environmental Record Source: Federal ERNS list
Search Distance: Property

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

Date of Government Version: 03/28/2016
Number of Days to Update: 51
Last EDR Contact :09/29/2016
Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180

FEMA UST: Underground Storage Tank Listing
Standard Environmental Record Source: State and tribal registered storage tank lists
Search Distance: Property

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Number of Days to Update: 55
Last EDR Contact :07/07/2016
Source: FEMA
Telephone: 202-646-5797

FINDS: Facility Index System/Facility Registry System
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

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

Date of Government Version: 07/20/2015
Number of Days to Update: 55
Last EDR Contact :09/07/2016
Source: EPA
Telephone: Not Reported

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

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

Date of Government Version: 04/09/2009
Number of Days to Update: 25
Last EDR Contact :08/17/2016
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Standard Environmental Record Source: Other Standard Environmental Records
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Number of Days to Update: 25
Last EDR Contact :08/17/2016
Source: EPA
Telephone: 202-566-1667

FUDS: Formerly Used Defense Sites
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: 0.333 Mile

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

Date of Government Version: 01/31/2015
Number of Days to Update: 97
Last EDR Contact :09/09/2016
Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285

FUELS PROGRAM: EPA Fuels Program Registered Listing
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 05/24/2016
Number of Days to Update: 49
Last EDR Contact :08/23/2016
Source: EPA
Telephone: 800-385-6164

FUSRAP: Formerly Utilized Sites Remedial Action Program
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: 0.333 Mile

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 07/21/2016
Number of Days to Update: 59
Last EDR Contact :07/26/2016
Source: Department of Energy
Telephone: 202-586-3559

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

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

Date of Government Version: 10/19/2006 Source: Environmental Protection Agency
Number of Days to Update: 40 Telephone: 202-564-2501
Last EDR Contact :12/17/2007

HMIRS: Hazardous Materials Information Reporting System
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

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

Date of Government Version: 06/27/2016 Source: U.S. Department of Transportation
Number of Days to Update: 87 Telephone: 202-366-4555
Last EDR Contact :09/27/2016

ICIS: Integrated Compliance Information System
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

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

Date of Government Version: 01/23/2015 Source: Environmental Protection Agency
Number of Days to Update: 31 Telephone: 202-564-5088
Last EDR Contact :07/07/2016

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal leaking storage tank lists
Search Distance: 0.333 Mile

A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/27/2015 Source: EPA Region 1
Number of Days to Update: 67 Telephone: 617-918-1313
Last EDR Contact :07/29/2016

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal leaking storage tank lists
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 01/07/2016 Source: EPA Region 10
Number of Days to Update: 41 Telephone: 206-553-2857
Last EDR Contact :07/27/2016

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal leaking storage tank lists
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 02/05/2016 Source: EPA Region 4

Number of Days to Update: 35 Telephone: 404-562-8677
Last EDR Contact :07/26/2016

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal leaking storage tank lists
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 02/17/2016 Source: EPA, Region 5
Number of Days to Update: 37 Telephone: 312-886-7439
Last EDR Contact :07/27/2016

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal leaking storage tank lists
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 12/11/2015 Source: EPA Region 6
Number of Days to Update: 105 Telephone: 214-665-6597
Last EDR Contact :07/27/2016

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal leaking storage tank lists
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 10/09/2015 Source: EPA Region 7
Number of Days to Update: 112 Telephone: 913-551-7003
Last EDR Contact :07/27/2016

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal leaking storage tank lists
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/13/2015 Source: EPA Region 8
Number of Days to Update: 118 Telephone: 303-312-6271
Last EDR Contact :07/27/2016

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal leaking storage tank lists
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 02/25/2016 Source: Environmental Protection Agency
Number of Days to Update: 37 Telephone: 415-972-3372
Last EDR Contact :07/27/2016

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: 0.333 Mile

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998 Source: Environmental Protection Agency
Number of Days to Update: 52 Telephone: 703-308-8245
Last EDR Contact :08/05/2016

INDIAN UST R1: Underground Storage Tanks on Indian Land

Standard Environmental Record Source: State and tribal registered storage tank lists
Search Distance: Property

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/20/2015 Source: EPA, Region 1
Number of Days to Update: 67 Telephone: 617-918-1313
Last EDR Contact :07/29/2016

INDIAN UST R10: Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal registered storage tank lists
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 01/07/2016 Source: EPA Region 10
Number of Days to Update: 41 Telephone: 206-553-2857
Last EDR Contact :07/27/2016

INDIAN UST R4: Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal registered storage tank lists
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 02/05/2016 Source: EPA Region 4
Number of Days to Update: 35 Telephone: 404-562-9424
Last EDR Contact :07/26/2016

INDIAN UST R5: Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal registered storage tank lists
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 11/05/2015 Source: EPA Region 5
Number of Days to Update: 52 Telephone: 312-886-6136
Last EDR Contact :07/27/2016

INDIAN UST R6: Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal registered storage tank lists
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 12/03/2015 Source: EPA Region 6
Number of Days to Update: 120 Telephone: 214-665-7591
Last EDR Contact :07/27/2016

INDIAN UST R7: Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal registered storage tank lists
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/23/2014 Source: EPA Region 7
Number of Days to Update: 65 Telephone: 913-551-7003
Last EDR Contact :07/27/2016

INDIAN UST R8: Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal registered storage tank lists
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 01/26/2016 Source: EPA Region 8
Number of Days to Update: 119 Telephone: 303-312-6137
Last EDR Contact :07/27/2016

INDIAN UST R9: Underground Storage Tanks on Indian Land
Standard Environmental Record Source: State and tribal registered storage tank lists
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 02/25/2016 Source: EPA Region 9
Number of Days to Update: 37 Telephone: 415-972-3368
Last EDR Contact :07/27/2016

INDIAN VCP R1: Voluntary Cleanup Priority Listing
Standard Environmental Record Source: State and tribal voluntary cleanup sites
Search Distance: Property

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015 Source: EPA, Region 1
Number of Days to Update: 142 Telephone: 617-918-1102
Last EDR Contact :09/26/2016

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
Standard Environmental Record Source: State and tribal voluntary cleanup sites
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008 Source: EPA, Region 7
Number of Days to Update: 27 Telephone: 913-551-7365
Last EDR Contact :04/20/2009

LEAD SMELTER 1: Lead Smelter Sites
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

A listing of former lead smelter site locations.

Date of Government Version: 03/07/2016 Source: Environmental Protection Agency
Number of Days to Update: 148 Telephone: 703-603-8787
Last EDR Contact :09/29/2016

LEAD SMELTER 2: Lead Smelter Sites
Standard Environmental Record Source: Other Standard Environmental Records
A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001 Source: American Journal of Public Health
Number of Days to Update: 36 Telephone: 703-305-6451
Last EDR Contact :12/02/2009

RECORD SOURCES AND CURRENCY

LIENS 2: CERCLA Lien Information

Standard Environmental Record Source: Federal CERCLIS

Search Distance: Property

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

Date of Government Version: 02/18/2014
Number of Days to Update: 37
Last EDR Contact :07/29/2016

Source: Environmental Protection Agency
Telephone: 202-564-6023

LUCIS: Land Use Control Information System

Standard Environmental Record Source: Federal institutional controls / engineering controls registries

Search Distance: 0.333 Mile

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

Date of Government Version: 05/28/2015
Number of Days to Update: 13
Last EDR Contact :08/12/2016

Source: Department of the Navy
Telephone: 843-820-7326

MLTS: Material Licensing Tracking System

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

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

Date of Government Version: 03/07/2016
Number of Days to Update: 28
Last EDR Contact :09/05/2016

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169

NPL: National Priority List

Standard Environmental Record Source: Federal NPL

Search Distance: 0.333 Mile

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

Date of Government Version: 03/07/2016
Number of Days to Update: 10
Last EDR Contact :10/05/2016

Source: EPA
Telephone: Not Reported

NPL Site Boundaries

Sources:

EPA"s Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-566-0690

EPA Region 1
Telephone: 617-918-1102

EPA Region 2
Telephone: 212-637-4293

RECORD SOURCES AND CURRENCY

EPA Region 3
Telephone: 215-814-5418

EPA Region 4
Telephone: 404-562-8681

EPA Region 5
Telephone: 312-353-1063

EPA Region 6
Telephone: 214-655-6659

EPA Region 7
Telephone: 913-551-7247

EPA Region 8
Telephone: 303-312-6118

EPA Region 9
Telephone: 415-947-4579

EPA Region 10
Telephone: 206-553-4479

NPL LIENS: Federal Superfund Liens

Standard Environmental Record Source: Federal NPL

Search Distance: Property

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

Date of Government Version: 10/15/1991
Number of Days to Update: 56
Last EDR Contact :08/15/2011

Source: EPA
Telephone: 202-564-4267

ODI: Open Dump Inventory

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: 0.333 Mile

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

Date of Government Version: 06/30/1985
Number of Days to Update: 39
Last EDR Contact :06/09/2004

Source: Environmental Protection Agency
Telephone: 800-424-9346

PADS: PCB Activity Database System

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

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

Date of Government Version: 01/20/2016
Number of Days to Update: 127
Last EDR Contact :07/15/2016

Source: EPA
Telephone: 202-566-0500

PCB TRANSFORMER: PCB Transformer Registration Database

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Number of Days to Update: 83
Last EDR Contact :07/29/2016
Source: Environmental Protection Agency
Telephone: 202-566-0517

Proposed NPL: Proposed National Priority List Sites
Standard Environmental Record Source: Federal NPL
Search Distance: 0.333 Mile

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

Date of Government Version: 03/07/2016
Number of Days to Update: 10
Last EDR Contact :10/05/2016
Source: EPA
Telephone: Not Reported

RAATS: RCRA Administrative Action Tracking System
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

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

Date of Government Version: 04/17/1995
Number of Days to Update: 35
Last EDR Contact :06/02/2008
Source: EPA
Telephone: 202-564-4104

RADINFO: Radiation Information Database
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

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

Date of Government Version: 07/07/2015
Number of Days to Update: 69
Last EDR Contact :10/05/2016
Source: Environmental Protection Agency
Telephone: 202-343-9775

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

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

Date of Government Version: 06/21/2016
Number of Days to Update: 64
Last EDR Contact :09/28/2016
Source: Environmental Protection Agency
Telephone: 703-308-8895

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators
Standard Environmental Record Source: Federal RCRA generators list
Search Distance: Property

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

Date of Government Version: 06/21/2016
Number of Days to Update: 64
Last EDR Contact :09/28/2016
Source: Environmental Protection Agency
Telephone: 703-308-8895

RCRA-LQG: RCRA - Large Quantity Generators
Standard Environmental Record Source: Federal RCRA generators list
Search Distance: Property

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

Date of Government Version: 06/21/2016
Number of Days to Update: 64
Last EDR Contact :09/28/2016
Source: Environmental Protection Agency
Telephone: 703-308-8895

RCRA-SQG: RCRA - Small Quantity Generators
Standard Environmental Record Source: Federal RCRA generators list
Search Distance: Property

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

Date of Government Version: 06/21/2016
Number of Days to Update: 64
Last EDR Contact :09/28/2016
Source: Environmental Protection Agency
Telephone: 703-308-8895

RCRA-TSDF: RCRA - Treatment, Storage and Disposal
Standard Environmental Record Source: Federal RCRA TSD facilities list
Search Distance: 0.333 Mile

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

Date of Government Version: 06/21/2016
Number of Days to Update: 64
Last EDR Contact :09/28/2016
Source: Environmental Protection Agency
Telephone: 703-308-8895

ROD: Records Of Decision
Standard Environmental Record Source: Federal NPL
Search Distance: 0.333 Mile

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

Date of Government Version: 11/25/2013
Source: EPA

Number of Days to Update: 74 Telephone: 703-416-0223
Last EDR Contact :09/09/2016

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: 0.333 Mile

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

Date of Government Version: 03/07/2011 Source: Environmental Protection Agency
Number of Days to Update: 54 Telephone: 615-532-8599
Last EDR Contact :08/15/2016

SEMS: Superfund Enterprise Management System
Standard Environmental Record Source: Federal CERCLIS
Search Distance: 0.333 Mile

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 03/07/2016 Source: EPA
Number of Days to Update: 10 Telephone: 800-424-9346
Last EDR Contact :07/22/2016

SEMS-ARCHIVE: Superfund Enterprise Management System Archive
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: 0.333 Mile

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 03/07/2016 Source: EPA
Number of Days to Update: 10 Telephone: 800-424-9346
Last EDR Contact :07/22/2016

SSTS: Section 7 Tracking Systems
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

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

Date of Government Version: 12/31/2009 Source: EPA
Number of Days to Update: 77 Telephone: 202-564-4203

Last EDR Contact :07/25/2016

TRIS: Toxic Chemical Release Inventory System
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

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

Date of Government Version: 12/31/2014 Source: EPA
Number of Days to Update: 133 Telephone: 202-566-0250
Last EDR Contact :08/26/2016

TSCA: Toxic Substances Control Act
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

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

Date of Government Version: 12/31/2012 Source: EPA
Number of Days to Update: 14 Telephone: 202-260-5521
Last EDR Contact :09/23/2016

UMTRA: Uranium Mill Tailings Sites
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: 0.333 Mile

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

Date of Government Version: 09/14/2010 Source: Department of Energy
Number of Days to Update: 146 Telephone: 505-845-0011
Last EDR Contact :09/09/2016

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)
Standard Environmental Record Source: Other Standard Environmental Records
Search Distance: Property

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/20/2015 Source: EPA
Number of Days to Update: 69 Telephone: 202-564-2496
Last EDR Contact :09/26/2016

US AIRS MINOR: Air Facility System Data
Standard Environmental Record Source: Other Standard Environmental Records
A listing of minor source facilities.

Date of Government Version: 10/20/2015 Source: EPA
Number of Days to Update: 69 Telephone: 202-564-2496

Last EDR Contact :09/26/2016

US BROWNFIELDS: A Listing of Brownfields Sites

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: 0.333 Mile

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/21/2016
Number of Days to Update: 72
Last EDR Contact :09/21/2016
Source: Environmental Protection Agency
Telephone: 202-566-2777

US CDL: Clandestine Drug Labs

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

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

Date of Government Version: 08/30/2016
Number of Days to Update: 17
Last EDR Contact :08/31/2016
Source: Drug Enforcement Administration
Telephone: 202-307-1000

US ENG CONTROLS: Engineering Controls Sites List

Standard Environmental Record Source: Federal institutional controls / engineering controls registries

Search Distance: Property

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

Date of Government Version: 05/09/2016
Number of Days to Update: 93
Last EDR Contact :08/31/2016
Source: Environmental Protection Agency
Telephone: 703-603-0695

US FIN ASSUR: Financial Assurance Information

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 05/08/2016
Number of Days to Update: 107
Last EDR Contact :08/17/2016
Source: Environmental Protection Agency
Telephone: 202-566-1917

US HIST CDL: National Clandestine Laboratory Register

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 08/31/2016
Number of Days to Update: 17
Last EDR Contact :08/31/2016
Source: Drug Enforcement Administration
Telephone: 202-307-1000

US INST CONTROL: Sites with Institutional Controls

Standard Environmental Record Source: Federal institutional controls / engineering controls registries

Search Distance: Property

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

Date of Government Version: 05/09/2016
Number of Days to Update: 93
Last EDR Contact :08/31/2016
Source: Environmental Protection Agency
Telephone: 703-603-0695

US MINES: Mines Master Index File

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

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

Date of Government Version: 08/05/2016
Number of Days to Update: 22
Last EDR Contact :09/01/2016
Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959

DOD: Department of Defense Sites

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: 0.333 Mile

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

Date of Government Version: 12/31/2005
Number of Days to Update: 62
Last EDR Contact :07/15/2016
Source: USGS
Telephone: 888-275-8747

INDIAN RESERV: Indian Reservations

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Number of Days to Update: 34
Last EDR Contact :07/15/2016
Source: USGS
Telephone: 202-208-3710

PWS: Public Water System Data

Standard Environmental Record Source: Other Standard Environmental Records

Search Distance: Property

RECORD SOURCES AND CURRENCY

This Safe Drinking Water Information System (SDWIS) file contains public water systems name and address, population served and the primary source of water

Date of Government Version: 12/17/2013
Number of Days to Update: 279
Last EDR Contact :08/29/2016

Source: EPA
Telephone: Not Reported

RECORD SOURCES AND CURRENCY

HISTORICAL USE RECORDS

RGA HWS: Recovered Government Archive State Hazardous Waste Facilities List
Standard Environmental Record Source: Exclusive Recovered Govt. Archives
Search Distance: Property

The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

Date of Government Version: Not Reported
Number of Days to Update: 191
Last EDR Contact :06/01/2012

Source: Department of Health
Telephone: Not Reported

RGA LF: Recovered Government Archive Solid Waste Facilities List
Standard Environmental Record Source: Exclusive Recovered Govt. Archives
Search Distance: Property

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

Date of Government Version: Not Reported
Number of Days to Update: 200
Last EDR Contact :06/01/2012

Source: Department of Health
Telephone: Not Reported

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank
Standard Environmental Record Source: Exclusive Recovered Govt. Archives
Search Distance: Property

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

Date of Government Version: Not Reported
Number of Days to Update: 186
Last EDR Contact :06/01/2012

Source: Department of Health
Telephone: Not Reported

EDR Hist Auto: EDR Exclusive Historic Gas Stations
Standard Environmental Record Source: Historical Gas Stations
Search Distance: 0.125 Mile

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: 02/20/2007
Number of Days to Update: 42
Last EDR Contact :02/21/2007

Source: EDR, Inc.
Telephone: Not Reported

EDR Hist Cleaner: EDR Exclusive Historic Dry Cleaners
Standard Environmental Record Source: Historical Dry Cleaners
Search Distance: 0.125 Mile

RECORD SOURCES AND CURRENCY

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: 02/20/2007
Number of Days to Update: 42
Last EDR Contact :02/21/2007

Source: EDR, Inc.
Telephone: Not Reported

EDR MGP: EDR Proprietary Manufactured Gas Plants

Standard Environmental Record Source: Former manufactured Gas Plants
Search Distance: 0.333 Mile

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: 08/28/2009
Number of Days to Update: 55
Last EDR Contact :11/30/2012

Source: EDR, Inc.
Telephone: Not Reported

RECORD SOURCES AND CURRENCY

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5' minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW® Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW® Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services. The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

STREET AND ADDRESS INFORMATION

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APPENDIX IV
REGULATORY RECORDS DOCUMENTATION *(EDR Radius Map Report)*

Fields 815, 819, 914, 915, and 916
Not Reported
Kihei, HI 96753

Inquiry Number: 4748527.2s
October 07, 2016

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

NOT REPORTED
KIHEI, HI 96753

COORDINATES

Latitude (North):	20.8185360 - 20° 49' 6.72"
Longitude (West):	156.4599300 - 156° 27' 35.74"
Universal Tranverse Mercator:	Zone 4
UTM X (Meters):	764373.5
UTM Y (Meters):	2304012.2
Elevation:	102 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5941643 PUU O KALI, HI
Version Date:	2013
Northeast Map:	5941605 PAIA, HI
Version Date:	2013
Southwest Map:	5941599 MAALAEA, HI
Version Date:	2013
Northwest Map:	5941607 WAILUKU, HI
Version Date:	2013

MAPPED SITES SUMMARY

Target Property Address:
NOT REPORTED
KIHEI, HI 96753

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
1	MAUI AIRPORT MILITAR		FUDS	Higher	1 ft.
A2	FORMER PUUNENE NAVY	SOUTH OF MOKULELE	LUST, UST	Lower	1 ft.
A3	PUUNENE ARMORY	2701 MOKULELE HWY	FINDS, ECHO	Lower	142, 0.027, WSW

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

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

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ..... National Priority List
Proposed NPL ..... Proposed National Priority List Sites
NPL LIENS ..... Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ..... National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ..... Federal Facility Site Information listing
SEMS ..... Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE ..... Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS ..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ..... RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ..... RCRA - Large Quantity Generators
RCRA-SQG ..... RCRA - Small Quantity Generators
RCRA-CESQG ..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS ..... Land Use Control Information System
US ENG CONTROLS ..... Engineering Controls Sites List

US INST CONTROL..... Sites with Institutional Controls

Federal ERNS list

ERNS..... Emergency Response Notification System

State- and tribal - equivalent CERCLIS

SHWS..... Sites List

State and tribal landfill and/or solid waste disposal site lists

SWF/LF..... Permitted Landfills in the State of Hawaii

State and tribal leaking storage tank lists

INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

FEMA UST..... Underground Storage Tank Listing
INDIAN UST..... Underground Storage Tanks on Indian Land

State and tribal institutional control / engineering control registries

ENG CONTROLS..... Engineering Control Sites
INST CONTROL..... Sites with Institutional Controls

State and tribal voluntary cleanup sites

VCP..... Voluntary Response Program Sites
INDIAN VCP..... Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

BROWNFIELDS..... Brownfields Sites

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands
ODI..... Open Dump Inventory
DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL..... Delisted National Clandestine Laboratory Register
CDL..... Clandestine Drug Lab Listing
US CDL..... National Clandestine Laboratory Register

EXECUTIVE SUMMARY

Local Land Records

LIENS 2..... CERCLA Lien Information

Records of Emergency Release Reports

HMIRS..... Hazardous Materials Information Reporting System
SPILLS..... Release Notifications
SPILLS 90..... SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR..... RCRA - Non Generators / No Longer Regulated
DOD..... Department of Defense Sites
SCRD DRYCLEANERS..... State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR..... Financial Assurance Information
EPA WATCH LIST..... EPA WATCH LIST
2020 COR ACTION..... 2020 Corrective Action Program List
TSCA..... Toxic Substances Control Act
TRIS..... Toxic Chemical Release Inventory System
SSTS..... Section 7 Tracking Systems
ROD..... Records Of Decision
RMP..... Risk Management Plans
RAATS..... RCRA Administrative Action Tracking System
PRP..... Potentially Responsible Parties
PADS..... PCB Activity Database System
ICIS..... Integrated Compliance Information System
FTTS..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS..... Material Licensing Tracking System
COAL ASH DOE..... Steam-Electric Plant Operation Data
COAL ASH EPA..... Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER..... PCB Transformer Registration Database
RADINFO..... Radiation Information Database
HIST FTTS..... FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS..... Incident and Accident Data
CONSENT..... Superfund (CERCLA) Consent Decrees
INDIAN RESERV..... Indian Reservations
FUSRAP..... Formerly Utilized Sites Remedial Action Program
UMTRA..... Uranium Mill Tailings Sites
LEAD SMELTERS..... Lead Smelter Sites
US AIRS..... Aerometric Information Retrieval System Facility Subsystem
US MINES..... Mines Master Index File
UXO..... Unexploded Ordnance Sites
DOCKET HWC..... Hazardous Waste Compliance Docket Listing
AIRS..... List of Permitted Facilities
DRYCLEANERS..... Permitted Drycleaner Facility Listing
Financial Assurance..... Financial Assurance Information Listing
UIC..... Underground Injection Wells Listing
FUELS PROGRAM..... EPA Fuels Program Registered Listing

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP..... EDR Proprietary Manufactured Gas Plants

EDR Hist Auto..... EDR Exclusive Historic Gas Stations
EDR Hist Cleaner..... EDR Exclusive Historic Dry Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS..... Recovered Government Archive State Hazardous Waste Facilities List
RGA LF..... Recovered Government Archive Solid Waste Facilities List
RGA LUST..... Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

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

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

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

STANDARD ENVIRONMENTAL RECORDS

State and tribal leaking storage tank lists

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

A review of the LUST list, as provided by EDR, and dated 01/13/2016 has revealed that there is 1 LUST site within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
FORMER PUUNENE NAVY	***SOUTH OF MOKULELE***	***0 - 1/8 (0.000 mi.)***	***A2***	***8***
Release ID: 000079 Facility Id: 9-503623 Facility Status: Site Cleanup Completed (NFA)				

State and tribal registered storage tank lists

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Health's Listing of Underground Storage Tanks.

A review of the UST list, as provided by EDR, and dated 01/13/2016 has revealed that there is 1 UST

site within approximately 0.75 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
FORMER PUUNENE NAVY	***SOUTH OF MOKULELE***	***0 - 1/8 (0.000 mi.)***	***A2***	***8***
Tank Status: Permanently Out of Use Facility Id: 9-503623 Date Closed: 11/16/2000 Date Closed: 04/10/2000 Date Closed: 03/30/2001 Date Closed: 10/04/2000 Date Closed: 03/30/2000				

ADDITIONAL ENVIRONMENTAL RECORDS

Other Ascertainable Records

FUDS: The Listing includes locations of Formerly Used Defense Sites Properties where the US Army Corps Of Engineers is actively working or will take necessary cleanup actions.

A review of the FUDS list, as provided by EDR, and dated 01/31/2015 has revealed that there is 1 FUDS site within approximately 1.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MAUI AIRPORT MILITAR		0 - 1/8 (0.000 mi.)	1	8

FINDS: The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S. EPA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 07/20/2015 has revealed that there is 1 FINDS site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
PUUNENE ARMORY	***2701 MOKULELE HWY***	***WSW 0 - 1/8 (0.027 mi.)***	***A3***	***10***

ECHO: ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

A review of the ECHO list, as provided by EDR, and dated 09/20/2015 has revealed that there is 1 ECHO site within approximately 0.5 miles of the target property.

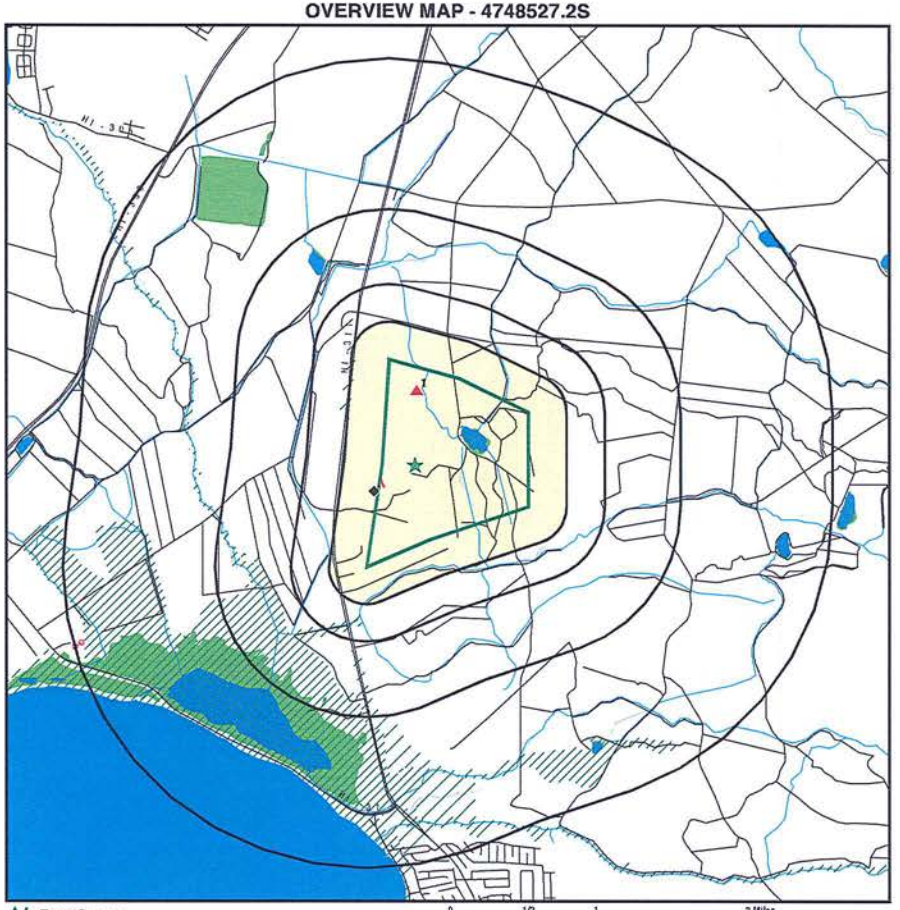
Lower Elevation	Address	Direction / Distance	Map ID	Page
PUUNENE ARMORY	***2701 MOKULELE HWY***	***WSW 0 - 1/8 (0.027 mi.)***	***A3***	***10***

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 1 records.

Site Name	Database(s)
WAIKAPU DUMP-MAUI COUNTY DUMP	SHWS

OVERVIEW MAP - 4748527.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands

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

SITE NAME: Fields 815, 819, 914, 915, and 916	CLIENT: Enviro Srvcs. and Trng. Center
ADDRESS: Not Reported Kihei HI 96753	CONTACT: Sharla Nakashima
LAT/LONG: 20.818536 / 156.45993	INQUIRY #: 4748527.2s DATE: October 07, 2016 9:43 pm

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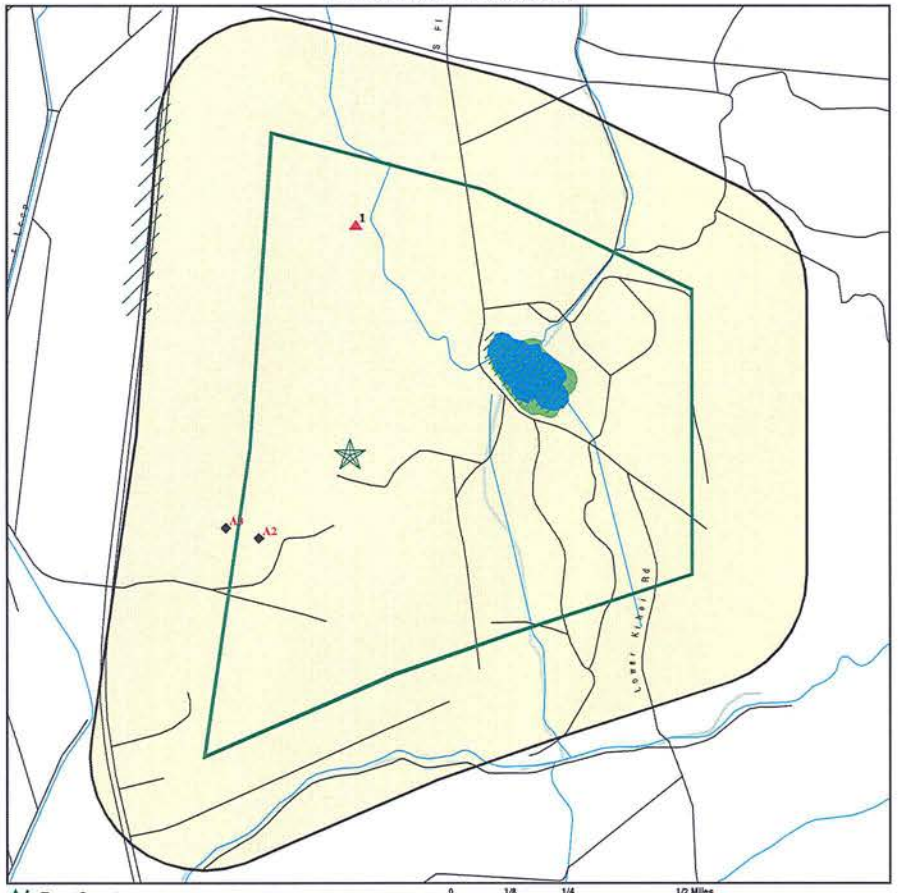
DETAIL MAP - 4748527.2S



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

SITE NAME: Fields 815, 819, 914, 915, and 916	CLIENT: Enviro Srvcs. and Trng. Center
ADDRESS: Not Reported	CONTACT: Sharla Nakashima
Kihei HI 96753	INQUIRY #: 4748527.2s
LAT/LONG: 20.818536 / 156.45993	DATE: October 07, 2016 9:44 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.500		0	0	0	0	0	0
Proposed NPL	1.500		0	0	0	0	0	0
NPL LIENS	0.500		0	0	0	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.500		0	0	0	0	0	0
Federal CERCLIS list								
FEDERAL FACILITY	1.000		0	0	0	0	NR	0
SEMS	1.000		0	0	0	0	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	1.000		0	0	0	0	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.500		0	0	0	0	0	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	1.000		0	0	0	0	NR	0
Federal RCRA generators list								
RCRA-LQG	0.750		0	0	0	0	NR	0
RCRA-SQG	0.750		0	0	0	0	NR	0
RCRA-CESQG	0.750		0	0	0	0	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	1.000		0	0	0	0	NR	0
US ENG CONTROLS	1.000		0	0	0	0	NR	0
US INST CONTROL	1.000		0	0	0	0	NR	0
Federal ERNS list								
ERNS	0.500		0	0	0	NR	NR	0
State- and tribal - equivalent CERCLIS								
SHWS	1.500		0	0	0	0	0	0
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	1.000		0	0	0	0	NR	0
State and tribal leaking storage tank lists								
LUST	1.000		1	0	0	0	NR	1
INDIAN LUST	1.000		0	0	0	0	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.750		0	0	0	0	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
UST	0.750		1	0	0	0	NR	1
INDIAN UST	0.750		0	0	0	0	NR	0
State and tribal institutional control / engineering control registries								
ENG CONTROLS	1.000		0	0	0	0	NR	0
INST CONTROL	1.000		0	0	0	0	NR	0
State and tribal voluntary cleanup sites								
VCP	1.000		0	0	0	0	NR	0
INDIAN VCP	1.000		0	0	0	0	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	1.000		0	0	0	0	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	1.000		0	0	0	0	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
INDIAN ODI	1.000		0	0	0	0	NR	0
ODI	1.000		0	0	0	0	NR	0
DEBRIS REGION 9	1.000		0	0	0	0	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.500		0	0	0	NR	NR	0
CDL	0.500		0	0	0	NR	NR	0
US CDL	0.500		0	0	0	NR	NR	0
Local Land Records								
LIENS 2	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.500		0	0	0	NR	NR	0
SPILLS	0.500		0	0	0	NR	NR	0
SPILLS 90	0.500		0	0	0	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.750		0	0	0	0	NR	0
FUDS	1.500		1	0	0	0	0	1
DOD	1.500		0	0	0	0	0	0
SCRD DRYCLEANERS	1.000		0	0	0	0	NR	0
US FIN ASSUR	0.500		0	0	0	NR	NR	0
EPA WATCH LIST	0.500		0	0	0	NR	NR	0
2020 COR ACTION	0.750		0	0	0	0	NR	0
TSCA	0.500		0	0	0	NR	NR	0
TRIS	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
SSTS	0.500		0	0	0	NR	NR	0
ROD	1.500		0	0	0	0	0	0
RMP	0.500		0	0	0	NR	NR	0
RAATS	0.500		0	0	0	NR	NR	0
PRP	0.500		0	0	0	NR	NR	0
PADS	0.500		0	0	0	NR	NR	0
ICIS	0.500		0	0	0	NR	NR	0
FTTS	0.500		0	0	0	NR	NR	0
MLTS	0.500		0	0	0	NR	NR	0
COAL ASH DOE	0.500		0	0	0	NR	NR	0
COAL ASH EPA	1.000		0	0	0	0	NR	0
PCB TRANSFORMER	0.500		0	0	0	NR	NR	0
RADINFO	0.500		0	0	0	NR	NR	0
HIST FTTS	0.500		0	0	0	NR	NR	0
DOT OPS	0.500		0	0	0	NR	NR	0
CONSENT	1.500		0	0	0	0	0	0
INDIAN RESERV	1.500		0	0	0	0	0	0
FUSRAP	1.500		0	0	0	0	0	0
UMTRA	1.000		0	0	0	0	NR	0
LEAD SMELTERS	0.500		0	0	0	NR	NR	0
US AIRS	0.500		0	0	0	NR	NR	0
US MINES	0.750		0	0	0	0	NR	0
FINDS	0.500		1	0	0	NR	NR	1
UXO	1.500		0	0	0	0	0	0
DOCKET HWC	0.500		0	0	0	NR	NR	0
AIRS	0.500		0	0	0	NR	NR	0
DRYCLEANERS	0.750		0	0	0	0	NR	0
Financial Assurance	0.500		0	0	0	NR	NR	0
UIC	0.500		0	0	0	NR	NR	0
FUELS PROGRAM	0.750		0	0	0	0	NR	0
ECHO	0.500		1	0	0	NR	NR	1
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.500		0	0	0	0	0	0
EDR Hist Auto	0.625		0	0	0	0	NR	0
EDR Hist Cleaner	0.625		0	0	0	0	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA HWS	0.500		0	0	0	NR	NR	0
RGA LF	0.500		0	0	0	NR	NR	0
RGA LUST	0.500		0	0	0	NR	NR	0
- Totals --		0	5	0	0	0	0	5

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS

Map ID / Direction / Distance / Elevation | Site | Database(s) | EDR ID Number / EPA ID Number

1 **MAUI AIRPORT MILITARY RES** **FUDS** **1007212729** **N/A**

< 1/8 **PUUNENE, HI**
1 ft.

FUDS:

Relative: Higher

Actual: 120 ft.

EPA Region:	09
Congressional District:	02
FUDS Number:	H09HI0225
State:	HI
Facility Name:	MAUI AIRPORT MILITARY RES
Fiscal Year:	2013
City:	PUUNENE
Federal Facility ID:	HI9799F3960
Telephone:	808-835-4004
INST ID:	54616
County:	MAUI
RAB:	Not reported
CORPS_DIST:	Honolulu District (POH)
NPL Status:	Not Listed
CTC:	5173.6000000000004
Current Owner:	State Government
Future Prog:	Not reported
Description:	The former Maui Airport Military Reservation consists of 1,875 acres and is located midway to Kihei on Mokulele Highway. The airport was known as Puunene Naval Air Station and was built from 1936-1939. The airport was used by the Navy from 1940 to 1946 and was later returned for civilian uses. After the military left the site, the area was used for agriculture, ranging from sugar cultivation to animal husbandry. The current owner is the State of Hawaii.
Current Program:	Not reported
History:	The site was used as a naval air station that also supported Army operations. Radio-controlled drones were used to aid in the development of accuracy among antiaircraft gunners. The site consisted of nine underground fuel storage tanks, a transformer building with a PCB transformer, and a former landfill that may need to be removed or remediated. Current use of the site includes a heliport, crop dusting airplane runway, and a drag strip. The County of Maui is proposing the area to be a county fairground.
Latitude Degree:	20
Latitude Minute:	50
Latitude Second:	33
Latitude Direction:	N
Longitude Degree:	-156
Longitude Minute:	28
Longitude Second:	35
Longitude Direction:	E

A2 **FORMER PUUNENE NAVY AIRPORT** **LUST** **U003732590**
SOUTH OF MOKULELE **UST** **N/A**

< 1/8 **PUUNENE, HI 96784**
1 ft.

Site 1 of 2 in cluster A

Relative: Lower

LUST:

Actual: 79 ft.

Facility ID:	9-503623
Facility Status:	Site Cleanup Completed (NFA)
Facility Status Date:	06/13/2001
Release ID:	000079
Project Officer:	Jose Ruiz

FORMER PUUNENE NAVY AIRPORT (Continued) **U003732590**

UST:
Facility ID: 9-503623
Owner: U.S. DEPT OF THE NAVY
Owner Address: Not reported
Owner City,St,Zip: Puunene, 96784 96784
Latitude: 20.815813
Longitude: -156.462737
Horizontal Reference Datum Name: Not reported
Horizontal Collection Method Name: Not reported

Tank ID: R-1A
Date Installed: Not reported
Tank Status: **Permanently Out of Use**
Date Closed: 03/30/2000
Tank Capacity: 50000
Substance: Other

Tank ID: R-1B
Date Installed: Not reported
Tank Status: **Permanently Out of Use**
Date Closed: 03/30/2000
Tank Capacity: 50000
Substance: Other

Tank ID: R-1C
Date Installed: Not reported
Tank Status: **Permanently Out of Use**
Date Closed: 03/30/2001
Tank Capacity: 50000
Substance: Other

Tank ID: R-2A
Date Installed: Not reported
Tank Status: **Permanently Out of Use**
Date Closed: 10/04/2000
Tank Capacity: 25000
Substance: Other

Tank ID: R-2B
Date Installed: Not reported
Tank Status: **Permanently Out of Use**
Date Closed: 10/04/2000
Tank Capacity: 25000
Substance: Other

Tank ID: R-2C
Date Installed: Not reported
Tank Status: **Permanently Out of Use**
Date Closed: 04/10/2000
Tank Capacity: 25000
Substance: Other

FORMER PUUNENE NAVY AIRPORT (Continued) **U003732590**

Tank ID: R-2D
Date Installed: Not reported
Tank Status: **Permanently Out of Use**
Date Closed: 04/10/2000
Tank Capacity: 25000
Substance: Other

Tank ID: R-3A
Date Installed: Not reported
Tank Status: **Permanently Out of Use**
Date Closed: 11/16/2000
Tank Capacity: 50000
Substance: Other

Tank ID: R-3B
Date Installed: Not reported
Tank Status: **Permanently Out of Use**
Date Closed: 11/16/2000
Tank Capacity: 50000
Substance: Other

A3 **PUUNENE ARMORY** **FINDS 1009404278**
WSW **2701 MOKULELE HWY** **ECHO N/A**
< 1/8 **KIHEI, HI 96753**
0.027 mi.
142 ft. **Site 2 of 2 in cluster A**

Relative: **Lower**

Actual: **77 ft.**

FINDS:

Registry ID: 110057184639

Environmental Interest/Information System
ICIS (Integrated Compliance Information System) is the Integrated Compliance Information System and provides a database that, when complete, will contain integrated Enforcement and Compliance information across most of EPA's programs. The vision for ICIS is to replace EPA's independent databases that contain Enforcement data with a single repository for that information. Currently, ICIS contains all Federal Administrative and Judicial enforcement actions. This information is maintained in ICIS by EPA in the Regional offices and it Headquarters. A future release of ICIS will replace the Permit Compliance System (PCS) which supports the NPDES and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities occurring in the Region that support Compliance and Enforcement programs. These include; Incident Tracking, Compliance Assistance, and Compliance Monitoring.

Registry ID: 110024881626

Environmental Interest/Information System
US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting

PUUNENE ARMORY (Continued) **1009404278**

requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

STATE MASTER

ECHO:
Envid: 1009404278
Registry ID: 110024881626
DFR URL: http://echo.epa.gov/detailed_facility_report?fid=110024881626

Envid: 1009404278
Registry ID: 110057184639
DFR URL: http://echo.epa.gov/detailed_facility_report?fid=110057184639

Envid: 1009404278
Registry ID: 110064666516
DFR URL: http://echo.epa.gov/detailed_facility_report?fid=110064666516

ORPHAN SUMMARY

Count: 1 records.

City	EDR ID	Site Name	Site Address	Zip	Database(s)
KAHULUI	1008819647	WAIKAPU DUMP-MAUI COUNTY DUMP	WAIKAPU RD	96732	SHWS

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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

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

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

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

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10

Source: EPA
Telephone: N/A
Last EDR Contact: 10/05/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

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

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 5
Telephone 312-886-6686

EPA Region 10
Telephone 206-553-8665

EPA Region 6
Telephone: 214-655-6659

EPA Region 7
Telephone: 913-551-7247

EPA Region 8
Telephone: 303-312-6774

EPA Region 9
Telephone: 415-947-4246

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

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10

Source: EPA
Telephone: N/A
Last EDR Contact: 10/05/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Quarterly

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

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

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal Delisted NPL site list

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

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10

Source: EPA
Telephone: N/A
Last EDR Contact: 10/05/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing
A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 11/13/2015
Date Data Arrived at EDR: 01/06/2016
Date Made Active in Reports: 05/20/2016
Number of Days to Update: 135

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 10/04/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System
SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 07/22/2016
Next Scheduled EDR Contact: 10/31/2016
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 07/22/2016
Next Scheduled EDR Contact: 10/31/2016
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 06/27/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

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

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

Federal RCRA generators list

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

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

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

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

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

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

Federal Institutional controls / engineering controls registries

LUCIS: Land Use Control Information System
LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/28/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 13

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 08/12/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Varies

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

Date of Government Version: 05/09/2016
Date Data Arrived at EDR: 06/01/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 93

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

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

Date of Government Version: 05/09/2016
Date Data Arrived at EDR: 06/01/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 93

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

Federal ERNS list

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

Date of Government Version: 03/28/2016
Date Data Arrived at EDR: 03/30/2016
Date Made Active in Reports: 05/20/2016
Number of Days to Update: 51
Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Annually

State- and tribal - equivalent CERCLIS

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

Date of Government Version: 05/06/2016
Date Data Arrived at EDR: 05/25/2016
Date Made Active in Reports: 08/02/2016
Number of Days to Update: 69
Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Semi-Annually

State and tribal landfill and/or solid waste disposal site lists

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

Date of Government Version: 09/17/2012
Date Data Arrived at EDR: 04/03/2013
Date Made Active in Reports: 05/10/2013
Number of Days to Update: 37
Source: Department of Health
Telephone: 808-586-4245
Last EDR Contact: 09/30/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

State and tribal leaking storage tank lists

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

Date of Government Version: 01/13/2016
Date Data Arrived at EDR: 01/15/2016
Date Made Active in Reports: 03/02/2016
Number of Days to Update: 47
Source: Department of Health
Telephone: 808-586-4228
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Semi-Annually

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 02/17/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 37
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 01/07/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 41
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 10/09/2015
Date Data Arrived at EDR: 02/12/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 112
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/13/2015
Date Data Arrived at EDR: 10/23/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 118
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 02/25/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 37
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/27/2015
Date Data Arrived at EDR: 10/29/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 67
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/29/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 02/05/2016
Date Data Arrived at EDR: 04/29/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 35
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 07/26/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Semi-Annually

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 12/11/2015
Date Data Arrived at EDR: 02/19/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 105
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Varies

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

Date of Government Version: 01/13/2016
Date Data Arrived at EDR: 01/15/2016
Date Made Active in Reports: 03/02/2016
Number of Days to Update: 47
Source: Department of Health
Telephone: 808-586-4228
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Semi-Annually

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 01/07/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 41
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 02/25/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 37
Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 01/26/2016
Date Data Arrived at EDR: 02/05/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 119
Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/29/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 67
Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/29/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 12/03/2015
Date Data Arrived at EDR: 02/04/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 120
Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 11/05/2015
Date Data Arrived at EDR: 11/13/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 52
Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 02/05/2016
Date Data Arrived at EDR: 04/29/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 35
Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 07/26/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Semi-Annually

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/23/2014
Date Data Arrived at EDR: 11/25/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 65
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

State and tribal institutional control / engineering control registries

ENG CONTROLS: Engineering Control Sites
A listing of sites with engineering controls in place.

Date of Government Version: 05/06/2016
Date Data Arrived at EDR: 05/25/2016
Date Made Active in Reports: 08/02/2016
Number of Days to Update: 69
Source: Department of Health
Telephone: 404-586-4249
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

INST CONTROL: Sites with Institutional Controls
Voluntary Remediation Program and Brownfields sites with institutional controls in place.

Date of Government Version: 05/06/2016
Date Data Arrived at EDR: 05/25/2016
Date Made Active in Reports: 08/02/2016
Number of Days to Update: 69
Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

VCP: Voluntary Response Program Sites
Sites participating in the Voluntary Response Program. The purpose of the VRP is to streamline the cleanup process in a way that will encourage prospective developers, lenders, and purchasers to voluntarily cleanup properties.

Date of Government Version: 05/06/2016
Date Data Arrived at EDR: 05/25/2016
Date Made Active in Reports: 08/02/2016
Number of Days to Update: 69

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Brownfields Sites
With certain legal exclusions and additions, the term 'brownfield site' means real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.

Date of Government Version: 05/06/2016
Date Data Arrived at EDR: 05/25/2016
Date Made Active in Reports: 08/02/2016
Number of Days to Update: 69

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/22/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 72

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 09/21/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 08/05/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Varies

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

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

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

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 07/20/2016
Next Scheduled EDR Contact: 10/07/2016
Data Release Frequency: No Update Planned

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register
A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 08/31/2016
Date Data Arrived at EDR: 09/06/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 17

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 10/10/2016
Data Release Frequency: No Update Planned

CDL: Clandestine Drug Lab Listing
A listing of clandestine drug lab site locations.

Date of Government Version: 08/04/2010
Date Data Arrived at EDR: 09/10/2010
Date Made Active in Reports: 10/22/2010
Number of Days to Update: 42

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

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

Date of Government Version: 08/30/2016
Date Data Arrived at EDR: 09/06/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 17

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Quarterly

Local Land Records

LIENS 2: CERCLA Lien Information
A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/18/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 07/29/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

Records of Emergency Release Reports

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

Date of Government Version: 06/27/2016
Date Data Arrived at EDR: 06/28/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 87

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 09/27/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Annually

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

Date of Government Version: 01/14/2016
Date Data Arrived at EDR: 02/24/2016
Date Made Active in Reports: 04/06/2016
Number of Days to Update: 42

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

SPILLS 90: SPILLS90 data from FirstSearch
Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 03/10/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/11/2013
Number of Days to Update: 39

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

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

Date of Government Version: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 09/09/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Varies

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

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

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands
Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: N/A

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

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 08/15/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information
All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 05/08/2016
Date Data Arrived at EDR: 05/18/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 107

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST
EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88
Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 08/08/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List
The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6
Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 09/06/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Varies

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

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 01/15/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 14
Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 09/23/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Every 4 Years

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

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 133
Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Annually

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

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77
Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 07/25/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Annually

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

Date of Government Version: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74
Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 09/09/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Annually

RMP: Risk Management Plans
When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 05/01/2016
Date Data Arrived at EDR: 05/26/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 99
Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 07/25/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

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

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35
Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3
Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 08/12/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

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

Date of Government Version: 01/20/2016
Date Data Arrived at EDR: 04/28/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 127
Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Annually

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

Date of Government Version: 01/23/2015
Date Data Arrived at EDR: 02/06/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 31
Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Quarterly

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

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 03/18/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 28
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 09/05/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 09/09/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 09/06/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 07/29/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

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

Date of Government Version: 07/07/2015
Date Data Arrived at EDR: 07/09/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 69
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 10/05/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Quarterly

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

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

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

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data
Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42
Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 08/02/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Varies

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

Date of Government Version: 03/31/2016
Date Data Arrived at EDR: 08/01/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 53

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

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

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 02/24/2015
Date Made Active in Reports: 09/30/2015
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations
This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program
DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 07/21/2016
Date Data Arrived at EDR: 07/26/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 59

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 07/26/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Varies

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

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 09/09/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites
A listing of former lead smelter site locations.

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/07/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 148

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites
A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)
The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/27/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 69

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/27/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 69

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Annually

US MINES: Mines Master Index File
Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/05/2016
Date Data Arrived at EDR: 09/01/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 22

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 09/01/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing
This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 09/02/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing
Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 09/02/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

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

Date of Government Version: 07/20/2015
Date Data Arrived at EDR: 09/09/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 55
Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 09/07/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing
A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 06/02/2016
Date Data Arrived at EDR: 06/03/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 91
Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 08/24/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

UXO: Unexploded Ordnance Sites
A listing of unexploded ordnance site locations

Date of Government Version: 10/25/2015
Date Data Arrived at EDR: 01/29/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 67
Source: Department of Defense
Telephone: 571-373-0407
Last EDR Contact: 09/19/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Varies

AIRS: List of Permitted Facilities
A listing of permitted facilities in the state.

Date of Government Version: 04/14/2016
Date Data Arrived at EDR: 04/19/2016
Date Made Active in Reports: 05/17/2016
Number of Days to Update: 28
Source: Department of Health
Telephone: 808-586-4200
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Varies

DRYCLEANERS: Permitted Drycleaner Facility Listing
A listing of permitted drycleaner facilities in the state.

Date of Government Version: 01/20/2016
Date Data Arrived at EDR: 04/19/2016
Date Made Active in Reports: 05/17/2016
Number of Days to Update: 28
Source: Department of Health
Telephone: 808-586-4200
Last EDR Contact: 10/03/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Varies

Financial Assurance: Financial Assurance Information Listing
A listing of financial assurance information for underground storage tank facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/24/2016
Date Made Active in Reports: 08/02/2016
Number of Days to Update: 39
Source: Department of Health
Telephone: 808-586-4226
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Varies

UIC: Underground Injection Wells Listing
A listing of underground injection well locations.

Date of Government Version: 02/07/2013
Date Data Arrived at EDR: 02/12/2013
Date Made Active in Reports: 04/09/2013
Number of Days to Update: 56
Source: Department of Health
Telephone: 808-586-4258
Last EDR Contact: 08/24/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 05/24/2016
Date Data Arrived at EDR: 05/25/2016
Date Made Active in Reports: 07/13/2016
Number of Days to Update: 49
Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 08/23/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Quarterly

ECHO: Enforcement & Compliance History Information
ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 09/20/2015
Date Data Arrived at EDR: 09/23/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 103
Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 09/20/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Quarterly

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A
Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historic Gas Stations
EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A
Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historic Dry Cleaners
EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS: Recovered Government Archive State Hazardous Waste Facilities List
The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/08/2014
Number of Days to Update: 191

Source: Department of Health
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LF: Recovered Government Archive Solid Waste Facilities List
The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/17/2014
Number of Days to Update: 200

Source: Department of Health
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank
The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/03/2014
Number of Days to Update: 186

Source: Department of Health
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Oil/Gas Pipelines
Source: PennWell Corporation
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory
Source: Office of Planning
Telephone: 808-587-2895

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

FIELDS 815, 819, 914, 915, AND 916
NOT REPORTED
KIHEI, HI 96753

TARGET PROPERTY COORDINATES

Latitude (North):	20.818536 - 20° 49' 6.73"
Longitude (West):	156.45993 - 156° 27' 35.75"
Universal Tranverse Mercator:	Zone 4
UTM X (Meters):	764373.5
UTM Y (Meters):	2304012.2
Elevation:	102 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5941643 PUU O KALI, HI
Version Date:	2013
Northeast Map:	5941605 PAIA, HI
Version Date:	2013
Southwest Map:	5941599 MAALAEA, HI
Version Date:	2013
Northwest Map:	5941607 WAILUKU, HI
Version Date:	2013

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

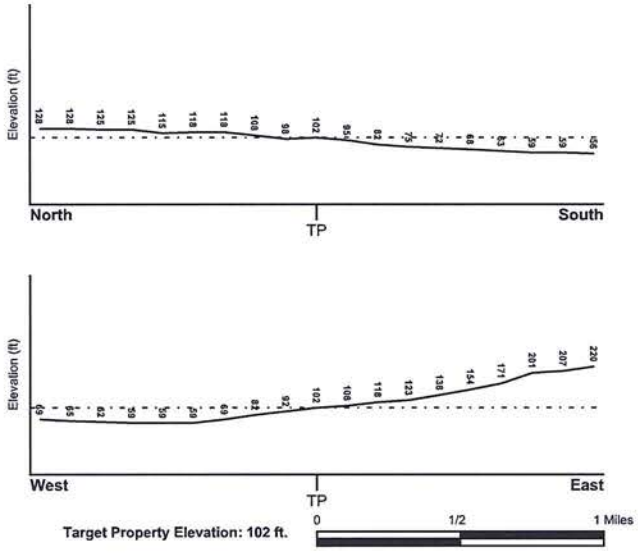
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General SW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
1500030557G	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
1500030255B	FEMA Q3 Flood data
1500030580F	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
NOT AVAILABLE	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

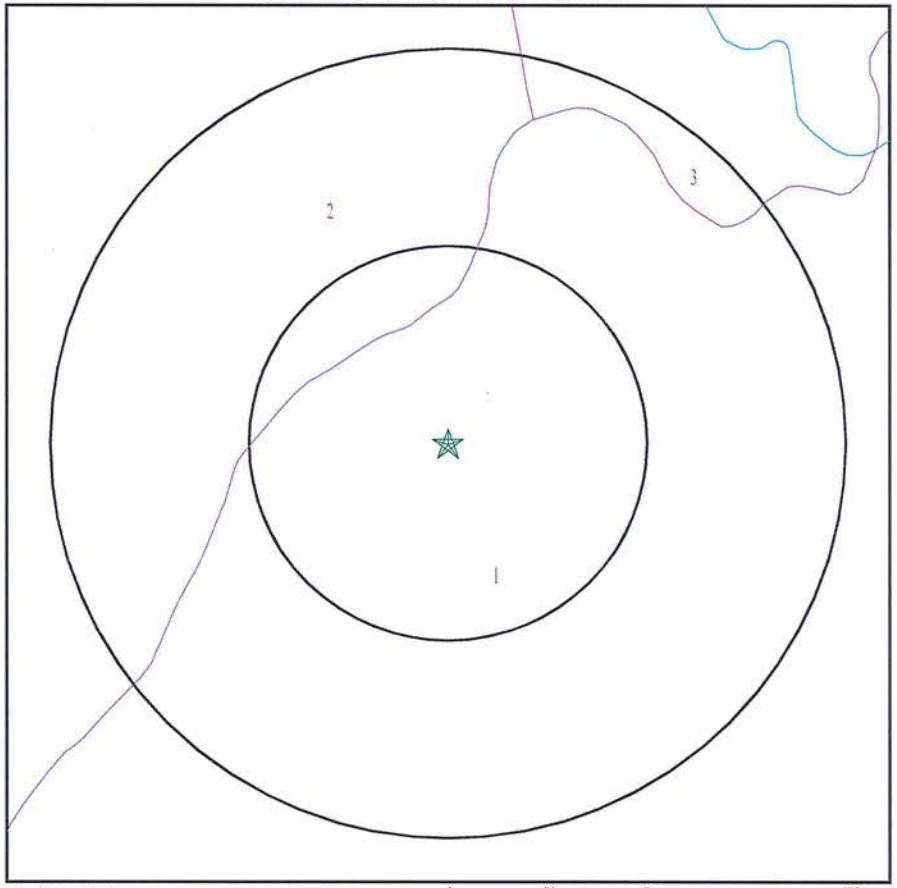
Era: -
System: -
Series: -
Code: N/A *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: -

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 4748527.2s



SITE NAME: Fields 815, 819, 914, 915, and 916	CLIENT: Enviro Srvcs. and Trng. Center
ADDRESS: Not Reported	CONTACT: Sharla Nakashima
Kihei HI 96753	INQUIRY #: 4748527.2s
LAT/LONG: 20.818536 / 156.45993	DATE: October 07, 2016 9:44 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Waiakoa

Soil Surface Texture: extremely stony silty clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 71 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	0 inches	extremely stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 14 Min: 4.23	Max: 7.3 Min: 6.6
2	0 inches	20 inches	extremely stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 14 Min: 4.23	Max: 7.3 Min: 6.1
3	20 inches	27 inches	stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 42.34 Min: 4.23	Max: 8.4 Min: 7.4
4	27 inches	31 inches	bedrock	Not reported	Not reported	Max: 0.42 Min: 0.02	Max: Min:

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Map ID: 2

Soil Component Name: Ewa

Soil Surface Texture: cobbly silty clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	18 inches	cobbly silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 14 Min: 4.23	Max: 7.8 Min: 6.6
2	18 inches	59 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 14 Min: 4.23	Max: 7.8 Min: 6.6

Soil Map ID: 3

Soil Component Name: Ewa

Soil Surface Texture: cobbly silty clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	18 inches	cobbly silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 14 Min: 4.23	Max: 7.8 Min: 6.6
2	18 inches	59 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 14 Min: 4.23	Max: 7.8 Min: 6.6

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 0.001 miles
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	USGS40000269033	1/4 - 1/2 Mile West
A4	USGS40000269018	1/2 - 1 Mile ESE

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

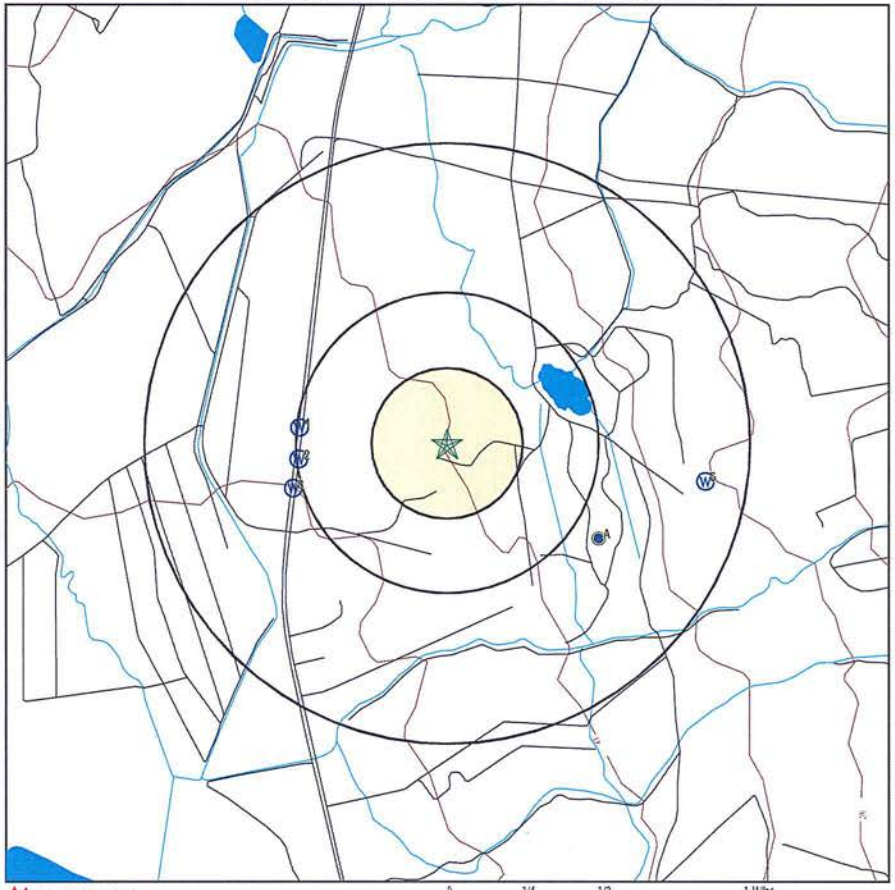
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
2	HI9000000003261	1/4 - 1/2 Mile West
3	HI9000000003262	1/2 - 1 Mile WSW
A5	HI9000000003260	1/2 - 1 Mile ESE
6	HI9000000003259	1/2 - 1 Mile East

PHYSICAL SETTING SOURCE MAP - 4748527.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location

SITE NAME: Fields 815, 819, 914, 915, and 916	CLIENT: Enviro Srvcs. and Trng. Center
ADDRESS: Not Reported Kihei HI 96753	CONTACT: Sharla Nakashima
LAT/LONG: 20.818536 / 156.45993	INQUIRY #: 4748527.2s DATE: October 07, 2016 9:44 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database	EDR ID Number
FED USGS	USGS40000269033

1
West
1/4 - 1/2 Mile
Lower

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-204921156281301		
Monloc name:	6-4928-01 W1		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20020000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	20.8192973
Longitude:	-156.4674577	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	70.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19420101	Welldepth:	70
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

Database	EDR ID Number
HI WELLS	HI9000000003261

2
West
1/4 - 1/2 Mile
Lower

Wid:	6-4928-001	Island:	Maui
Well name:	Puunene Airp TH	Old name:	Not Reported
Yr drilled:	1942		
Driller:	Curtis Wong (Naval Facilities Engineering Command Hawaii, Asset Management, NAVFAC Hawaii)		
Quad map:	6		
Long83dd:	-156.4675		
Lat83dd:	20.817778		
Gps:	-1	Utm:	0
Owner user:	DOT, Airports Division		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	1-	Well type:	Not Reported
Casing dia:	8	Ground el:	70
Well depth:	70		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	ABN - Sealed		
Use year:	Not Reported		
Init head:	3.6	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	Not Reported

Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	300		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	THO		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	0
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	.432		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(2) 3-8-008:001
Aqui code:	60301		
Latest hd:	Not Reported	Wcr:	01-JAN-42
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000003261

3
WSW
1/2 - 1 Mile
Lower

HI WELLS **HI9000000003262**

Wid:	6-4928-002	Island:	Maui
Well name:	Puunene Airp Shaft	Old name:	Not Reported
Yr drilled:	1942		
Driller:	Curtis Wong (Naval Facilities Engineering Command Hawaii, Asset Management, NAVFAC Hawaii)		
Quad map:	6		
Long83dd:	-156.467778		
Lat83dd:	20.816389		
Gps:	-1	Utm:	0
Owner user:	Hawaiian Commercial & Sugar Co. (HC&S)		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	34-SH	Well type:	SHF
Casing dia:	72	Ground el:	50
Well depth:	53		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	ABN - Sealed		
Use year:	Not Reported		
Init head:	3.7	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	2000		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	THO		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-3
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		

Pump mgd:	2.88		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(2) 3-8-008:001
Aqui code:	60301		
Latest hd:	Not Reported	Wcr:	01-JAN-42
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000003262

A4
ESE
1/2 - 1 Mile
Higher

FED USGS **USGS40000269018**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc identifier:	USGS-204902156271801		
Monloc name:	6-4927-01 W260		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20020000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	20.8140198
Longitude:	-156.4521806	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	120.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

A5
ESE
1/2 - 1 Mile
Higher

HI WELLS **HI9000000003260**

Wid:	6-4927-001	Island:	Maui
Well name:	TMK 3-8-08	Old name:	Not Reported
Yr drilled:	0		
Driller:	Not Reported		
Quad map:	8		
Long83dd:	-156.452222		
Lat83dd:	20.813889		
Gps:	0	Utm:	-1
Owner user:	CMBY 2011 Investment, LLC		
Land owner:	CMBY 2011 Investment, LLC		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Pump insta:	Not Reported		
Old number:	260-	Well type:	Not Reported
Casing dia:	Not Reported	Ground el:	120
Well depth:	0		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	Other		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	THO		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(2) 3-8-008:019
Aqui code:	60301		
Latest hd:	Not Reported	Wcr:	30-DEC-99
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000003260

6
East
1/2 - 1 Mile
Higher

HI WELLS **HI9000000003259**

Wid:	6-4926-002	Island:	Maui
Well name:	Hawaiian Cement	Old name:	Not Reported
Yr drilled:	2007		
Driller:	Michael Robertson (Wailani Drilling Services Inc)		
Quad map:	8		
Long83dd:	-156.44675		
Lat83dd:	20.816722		
Gps:	-1	Utm:	0
Owner user:	Hawaiian Cement - Maui Concrete and Aggregate Division		
Land owner:	State of Hawaii		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	ROT
Casing dia:	8	Ground el:	177
Well depth:	196		
Solid case:	176	Perf case:	196
Use:	UNU - Unused		
Use year:	Not Reported		
Init head:	2.65	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	200		
Test date:	6/8/2007	Test gpm:	250

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Test ddown:	0.55	Test chlor:	190
Test temp:	69	Test unit:	F
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	TK		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-19
Bot solid:	1	Bot perf:	-19
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(2) 3-8-008:031
Aqui code:	60302		
Latest hd:	Not Reported	Wcr:	15-AUG-07
Pir:	Not Reported		
Surveyor:	Kirk Tanaka		
T:	Not Reported	Site id:	HI9000000003259

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for MAUI County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 96753

Number of sites tested: 10

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.010 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory
Source: Office of Planning
Telephone: 808-587-2895

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Well Index Database
Source: Commission on Water Resource Management
Telephone: 808-587-0214
CWRM maintains a Well Index Database to track specific information pertaining to the construction and installation of production wells in Hawaii

OTHER STATE DATABASE INFORMATION

RADON

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STREET AND ADDRESS INFORMATION

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Field 411
Not Reported
Kihei, HI 96753

Inquiry Number: 4748534.12s
October 07, 2016

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

FORM-LBC-RG

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

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

NOT REPORTED
KIHEI, HI 96753

COORDINATES

Latitude (North):	20.8027420 - 20° 48' 9.87"
Longitude (West):	156.4032070 - 156° 24' 11.54"
Universal Tranverse Mercator:	Zone 4
UTM X (Meters):	770308.5
UTM Y (Meters):	2302357.2
Elevation:	607 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5941643 PUU O KALI, HI
Version Date:	2013

MAPPED SITES SUMMARY

Target Property Address:
NOT REPORTED
KIHEI, HI 96753

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION

NO MAPPED SITES FOUND

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

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

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites
NPL LIENS..... Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL..... National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY..... Federal Facility Site Information listing
SEMS..... Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE..... Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG..... RCRA - Large Quantity Generators
RCRA-SQG..... RCRA - Small Quantity Generators
RCRA-CESQG..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS..... Land Use Control Information System
US ENG CONTROLS..... Engineering Controls Sites List

EXECUTIVE SUMMARY

US INST CONTROL..... Sites with Institutional Controls

Federal ERNS list

ERNS..... Emergency Response Notification System

State- and tribal - equivalent CERCLIS

SHWS..... Sites List

State and tribal landfill and/or solid waste disposal site lists

SWF/LF..... Permitted Landfills in the State of Hawaii

State and tribal leaking storage tank lists

LUST..... Leaking Underground Storage Tank Database
INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

FEMA UST..... Underground Storage Tank Listing
UST..... Underground Storage Tank Database
INDIAN UST..... Underground Storage Tanks on Indian Land

State and tribal institutional control / engineering control registries

ENG CONTROLS..... Engineering Control Sites
INST CONTROL..... Sites with Institutional Controls

State and tribal voluntary cleanup sites

VCP..... Voluntary Response Program Sites
INDIAN VCP..... Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

BROWNFIELDS..... Brownfields Sites

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands
ODI..... Open Dump Inventory
DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL..... Delisted National Clandestine Laboratory Register

CDL..... Clandestine Drug Lab Listing
US CDL..... National Clandestine Laboratory Register

Local Land Records

LIENS 2..... CERCLA Lien Information

Records of Emergency Release Reports

HMIRS..... Hazardous Materials Information Reporting System
SPILLS..... Release Notifications
SPILLS 90..... SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR..... RCRA - Non Generators / No Longer Regulated
FUDS..... Formerly Used Defense Sites
DOD..... Department of Defense Sites
SCRD DRYCLEANERS..... State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR..... Financial Assurance Information
EPA WATCH LIST..... EPA WATCH LIST
2020 COR ACTION..... 2020 Corrective Action Program List
TSCA..... Toxic Substances Control Act
TRIS..... Toxic Chemical Release Inventory System
SSTS..... Section 7 Tracking Systems
ROD..... Records Of Decision
RMP..... Risk Management Plans
RAATS..... RCRA Administrative Action Tracking System
PRP..... Potentially Responsible Parties
PADS..... PCB Activity Database System
ICIS..... Integrated Compliance Information System
FTTS..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS..... Material Licensing Tracking System
COAL ASH DOE..... Steam-Electric Plant Operation Data
COAL ASH EPA..... Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER..... PCB Transformer Registration Database
RADINFO..... Radiation Information Database
HIST FTTS..... FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS..... Incident and Accident Data
CONSENT..... Superfund (CERCLA) Consent Decrees
INDIAN RESERV..... Indian Reservations
FUSRAP..... Formerly Utilized Sites Remedial Action Program
UMTRA..... Uranium Mill Tailings Sites
LEAD SMELTERS..... Lead Smelter Sites
US AIRS..... Aerometric Information Retrieval System Facility Subsystem
US MINES..... Mines Master Index File
FINDS..... Facility Index System/Facility Registry System
UXO..... Unexploded Ordnance Sites
DOCKET HWC..... Hazardous Waste Compliance Docket Listing
AIRS..... List of Permitted Facilities
DRYCLEANERS..... Permitted Drycleaner Facility Listing
Financial Assurance..... Financial Assurance Information Listing
UIC..... Underground Injection Wells Listing
FUELS PROGRAM..... EPA Fuels Program Registered Listing

ECHO..... Enforcement & Compliance History Information

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP..... EDR Proprietary Manufactured Gas Plants
EDR Hist Auto..... EDR Exclusive Historic Gas Stations
EDR Hist Cleaner..... EDR Exclusive Historic Dry Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS..... Recovered Government Archive State Hazardous Waste Facilities List
RGA LF..... Recovered Government Archive Solid Waste Facilities List
RGA LUST..... Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

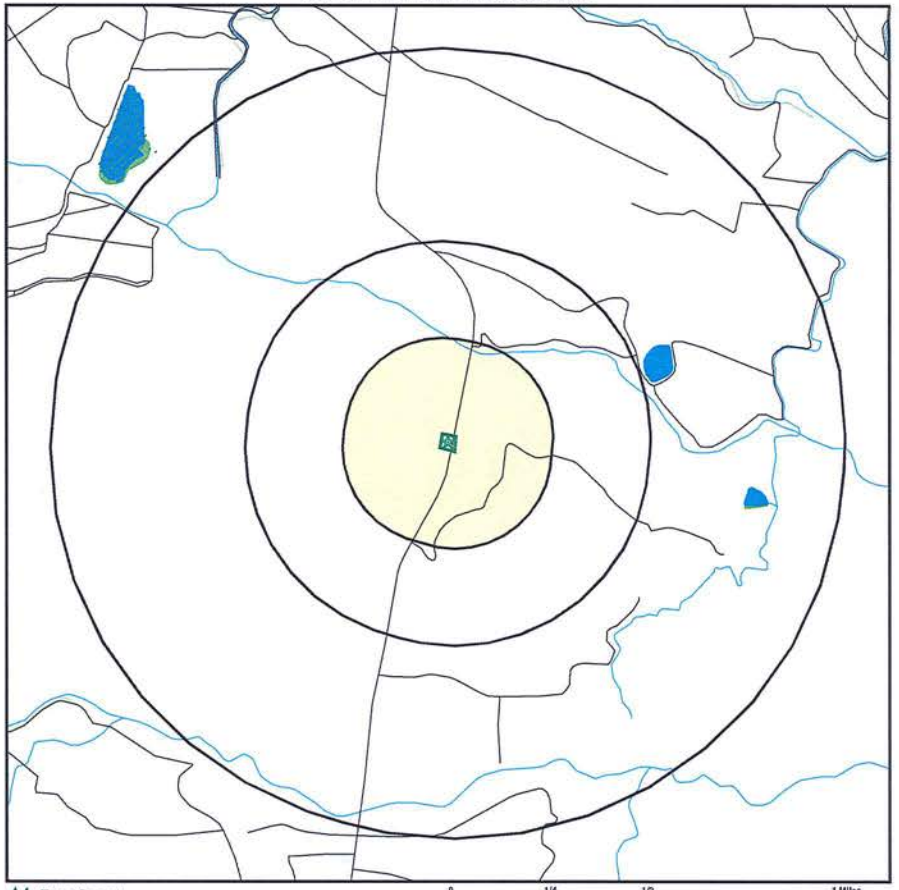
Surrounding sites were not identified.

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

EXECUTIVE SUMMARY

There were no unmapped sites in this report.

OVERVIEW MAP - 4748534.12S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands

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

SITE NAME: Field 411	CLIENT: Enviro Srvcs. and Trng. Center
ADDRESS: Not Reported Kihei HI 96753	CONTACT: Sharla Nakashima
LAT/LONG: 20.802742 / 156.403207	INQUIRY #: 4748534.12s DATE: October 07, 2016 9:42 pm

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DETAIL MAP - 4748534.12S



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

SITE NAME: Field 411	CLIENT: Enviro Srvcs. and Trng. Center
ADDRESS: Not Reported Kihei HI 96753	CONTACT: Sharla Nakashima
LAT/LONG: 20.802742 / 156.403207	INQUIRY #: 4748534.12s DATE: October 07, 2016 9:42 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	0.001		0	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
State- and tribal - equivalent CERCLIS								
SHWS	1.000		0	0	0	0	NR	0
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
UST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal institutional control / engineering control registries								
ENG CONTROLS	0.500		0	0	0	NR	NR	0
INST CONTROL	0.500		0	0	0	NR	NR	0
State and tribal voluntary cleanup sites								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.001		0	NR	NR	NR	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
US CDL	0.001		0	NR	NR	NR	NR	0
Local Land Records								
LIENS 2	0.001		0	NR	NR	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
SPILLS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	0.001		0	NR	NR	NR	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
FINDS	0.001		0	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
AIRS	0.001		0	NR	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
UIC	0.001		0	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
ECHO	0.001		0	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA HWS	0.001		0	NR	NR	NR	NR	0
RGA LF	0.001		0	NR	NR	NR	NR	0
RGA LUST	0.001		0	NR	NR	NR	NR	0
- Totals --		0	0	0	0	0	0	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS

Map ID / Direction / Distance / Elevation	Site	Database(s)	EDR ID Number / EPA ID Number

NO SITES FOUND

ORPHAN SUMMARY

Count: 0 records.

City	EDR ID	Site Name	Site Address	Zip	Database(s)
NO SITES FOUND					

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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

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

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

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

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10

Source: EPA
Telephone: N/A
Last EDR Contact: 10/05/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

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

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

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

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10

Source: EPA
Telephone: N/A
Last EDR Contact: 10/05/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Quarterly

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

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

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

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

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10
Source: EPA
Telephone: N/A
Last EDR Contact: 10/05/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing
A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 11/13/2015
Date Data Arrived at EDR: 01/06/2016
Date Made Active in Reports: 05/20/2016
Number of Days to Update: 135
Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 10/04/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System
SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10
Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 07/22/2016
Next Scheduled EDR Contact: 10/31/2016
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10
Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 07/22/2016
Next Scheduled EDR Contact: 10/31/2016
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 06/27/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64
Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

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

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64
Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

Federal RCRA generators list

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

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64
Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

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

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64
Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

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

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64
Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

Federal Institutional controls / engineering controls registries

LUCIS: Land Use Control Information System
LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/28/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 13
Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 08/12/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Varies

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

Date of Government Version: 05/09/2016
Date Data Arrived at EDR: 06/01/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 93
Source: Environmental Protection Agency
Telephone: 703-603-0595
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

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

Date of Government Version: 05/09/2016
Date Data Arrived at EDR: 06/01/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 93
Source: Environmental Protection Agency
Telephone: 703-603-0595
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal ERNS list

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

Date of Government Version: 03/28/2016
Date Data Arrived at EDR: 03/30/2016
Date Made Active in Reports: 05/20/2016
Number of Days to Update: 51
Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Annually

State- and tribal - equivalent CERCLIS

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

Date of Government Version: 05/06/2016
Date Data Arrived at EDR: 05/25/2016
Date Made Active in Reports: 08/02/2016
Number of Days to Update: 69
Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Semi-Annually

State and tribal landfill and/or solid waste disposal site lists

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

Date of Government Version: 09/17/2012
Date Data Arrived at EDR: 04/03/2013
Date Made Active in Reports: 05/10/2013
Number of Days to Update: 37
Source: Department of Health
Telephone: 808-586-4245
Last EDR Contact: 09/30/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

State and tribal leaking storage tank lists

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

Date of Government Version: 01/13/2016
Date Data Arrived at EDR: 01/15/2016
Date Made Active in Reports: 03/02/2016
Number of Days to Update: 47
Source: Department of Health
Telephone: 808-586-4228
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Semi-Annually

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 02/17/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 37
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 01/07/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 41
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 10/09/2015
Date Data Arrived at EDR: 02/12/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 112
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/13/2015
Date Data Arrived at EDR: 10/23/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 118
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 02/25/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 37
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/27/2015
Date Data Arrived at EDR: 10/29/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 67
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/29/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 02/05/2016
Date Data Arrived at EDR: 04/29/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 35
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 07/26/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Semi-Annually

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 12/11/2015
Date Data Arrived at EDR: 02/19/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 105
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Varies

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

Date of Government Version: 01/13/2016
Date Data Arrived at EDR: 01/15/2016
Date Made Active in Reports: 03/02/2016
Number of Days to Update: 47
Source: Department of Health
Telephone: 808-586-4228
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Semi-Annually

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 01/07/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 41
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 02/25/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 37
Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 01/26/2016
Date Data Arrived at EDR: 02/05/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 119
Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/29/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 67
Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/29/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 12/03/2015
Date Data Arrived at EDR: 02/04/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 120
Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 11/05/2015
Date Data Arrived at EDR: 11/13/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 52
Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 02/05/2016
Date Data Arrived at EDR: 04/29/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 35
Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 07/26/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Semi-Annually

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/23/2014
Date Data Arrived at EDR: 11/25/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 65
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

State and tribal institutional control / engineering control registries

ENG CONTROLS: Engineering Control Sites
A listing of sites with engineering controls in place.

Date of Government Version: 05/06/2016
Date Data Arrived at EDR: 05/25/2016
Date Made Active in Reports: 08/02/2016
Number of Days to Update: 69
Source: Department of Health
Telephone: 404-586-4249
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

INST CONTROL: Sites with Institutional Controls
Voluntary Remediation Program and Brownfields sites with institutional controls in place.

Date of Government Version: 05/06/2016
Date Data Arrived at EDR: 05/25/2016
Date Made Active in Reports: 08/02/2016
Number of Days to Update: 69
Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142
Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27
Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

VCP: Voluntary Response Program Sites
Sites participating in the Voluntary Response Program. The purpose of the VRP is to streamline the cleanup process in a way that will encourage prospective developers, lenders, and purchasers to voluntarily cleanup properties.

Date of Government Version: 05/06/2016
Date Data Arrived at EDR: 05/25/2016
Date Made Active in Reports: 08/02/2016
Number of Days to Update: 69
Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Brownfields Sites
With certain legal exclusions and additions, the term 'brownfield site' means real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.

Date of Government Version: 05/06/2016
Date Data Arrived at EDR: 05/25/2016
Date Made Active in Reports: 08/02/2016
Number of Days to Update: 69
Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/22/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 72
Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 09/21/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52
Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 08/05/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Varies

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

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39
Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137
Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 07/20/2016
Next Scheduled EDR Contact: 10/07/2016
Data Release Frequency: No Update Planned

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register
A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 08/31/2016
Date Data Arrived at EDR: 09/06/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 17
Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 10/10/2016
Data Release Frequency: No Update Planned

CDL: Clandestine Drug Lab Listing
A listing of clandestine drug lab site locations.

Date of Government Version: 08/04/2010
Date Data Arrived at EDR: 09/10/2010
Date Made Active in Reports: 10/22/2010
Number of Days to Update: 42
Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

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

Date of Government Version: 08/30/2016
Date Data Arrived at EDR: 09/06/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 17
Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Quarterly

Local Land Records

LIENS 2: CERCLA Lien Information
A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/18/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37
Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 07/29/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

Records of Emergency Release Reports

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

Date of Government Version: 06/27/2016
Date Data Arrived at EDR: 06/28/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 87
Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 09/27/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Annually

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

Date of Government Version: 01/14/2016
Date Data Arrived at EDR: 02/24/2016
Date Made Active in Reports: 04/06/2016
Number of Days to Update: 42
Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

SPILLS 90: SPILLS90 data from FirstSearch
Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 03/10/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/11/2013
Number of Days to Update: 39
Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

FUDS: Formerly Used Defense Sites

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

Date of Government Version: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 09/09/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Varies

DOD: Department of Defense Sites

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

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

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

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

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 08/15/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 05/08/2016
Date Data Arrived at EDR: 05/18/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 107

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 08/08/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 09/06/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

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

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 01/15/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 14

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 09/23/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

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

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 133

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

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

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 07/25/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Annually

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

Date of Government Version: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74
Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 09/09/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Annually

RMP: Risk Management Plans
When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 05/01/2016
Date Data Arrived at EDR: 05/26/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 99
Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 07/25/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

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

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35
Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3
Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 08/12/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

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

Date of Government Version: 01/20/2016
Date Data Arrived at EDR: 04/28/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 127
Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Annually

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

Date of Government Version: 01/23/2015
Date Data Arrived at EDR: 02/06/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 31
Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Quarterly

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

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 03/18/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 28
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 09/05/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 09/09/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 09/06/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 07/29/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

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

Date of Government Version: 07/07/2015
Date Data Arrived at EDR: 07/09/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 69
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 10/05/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Quarterly

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

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

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

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data
Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42
Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 08/02/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Varies

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

Date of Government Version: 03/31/2016
Date Data Arrived at EDR: 08/01/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 53
Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

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

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 02/24/2015
Date Made Active in Reports: 09/30/2015
Number of Days to Update: 218
Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations
This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34
Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program
DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 07/21/2016
Date Data Arrived at EDR: 07/26/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 59
Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 07/26/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Varies

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

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146
Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 09/09/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites
A listing of former lead smelter site locations.

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/07/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 148
Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites
A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)
The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/27/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 69

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/27/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 69

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Annually

US MINES: Mines Master Index File
Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/05/2016
Date Data Arrived at EDR: 09/01/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 22

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 09/01/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing
This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 09/02/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing
Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 09/02/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

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

Date of Government Version: 07/20/2015
Date Data Arrived at EDR: 09/09/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 55

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 09/07/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing
A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 06/02/2016
Date Data Arrived at EDR: 06/03/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 91

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 08/24/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

UXO: Unexploded Ordnance Sites
A listing of unexploded ordnance site locations

Date of Government Version: 10/25/2015
Date Data Arrived at EDR: 01/29/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 67

Source: Department of Defense
Telephone: 571-373-0407
Last EDR Contact: 09/19/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Varies

AIRS: List of Permitted Facilities
A listing of permitted facilities in the state.

Date of Government Version: 04/14/2016
Date Data Arrived at EDR: 04/19/2016
Date Made Active in Reports: 05/17/2016
Number of Days to Update: 28

Source: Department of Health
Telephone: 808-586-4200
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Varies

DRYCLEANERS: Permitted Drycleaner Facility Listing
A listing of permitted drycleaner facilities in the state.

Date of Government Version: 01/20/2016
Date Data Arrived at EDR: 04/19/2016
Date Made Active in Reports: 05/17/2016
Number of Days to Update: 28

Source: Department of Health
Telephone: 808-586-4200
Last EDR Contact: 10/03/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Varies

Financial Assurance: Financial Assurance Information Listing
A listing of financial assurance information for underground storage tank facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/24/2016
Date Made Active in Reports: 08/02/2016
Number of Days to Update: 39

Source: Department of Health
Telephone: 808-586-4226
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Varies

UIC: Underground Injection Wells Listing
A listing of underground injection well locations.

Date of Government Version: 02/07/2013
Date Data Arrived at EDR: 02/12/2013
Date Made Active in Reports: 04/09/2013
Number of Days to Update: 56
Source: Department of Health
Telephone: 808-586-4258
Last EDR Contact: 08/24/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 05/24/2016
Date Data Arrived at EDR: 05/25/2016
Date Made Active in Reports: 07/13/2016
Number of Days to Update: 49
Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 08/23/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Quarterly

ECHO: Enforcement & Compliance History Information
ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 09/20/2015
Date Data Arrived at EDR: 09/23/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 103
Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 09/20/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Quarterly

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A
Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historic Gas Stations
EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A
Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EDR Hist Cleaner: EDR Exclusive Historic Dry Cleaners
EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A
Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS: Recovered Government Archive State Hazardous Waste Facilities List
The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/08/2014
Number of Days to Update: 191
Source: Department of Health
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LF: Recovered Government Archive Solid Waste Facilities List
The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/17/2014
Number of Days to Update: 200
Source: Department of Health
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank
The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/03/2014
Number of Days to Update: 186
Source: Department of Health
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Oil/Gas Pipelines
Source: PennWell Corporation
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory
Source: Office of Planning
Telephone: 808-587-2895

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

FIELD 411
NOT REPORTED
KIHEI, HI 96753

TARGET PROPERTY COORDINATES

Latitude (North):	20.802742 - 20° 48' 9.87"
Longitude (West):	156.403207 - 156° 24' 11.55"
Universal Tranverse Mercator:	Zone 4
UTM X (Meters):	770308.5
UTM Y (Meters):	2302357.2
Elevation:	607 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5941643 PUU O KALI, HI
Version Date:	2013

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

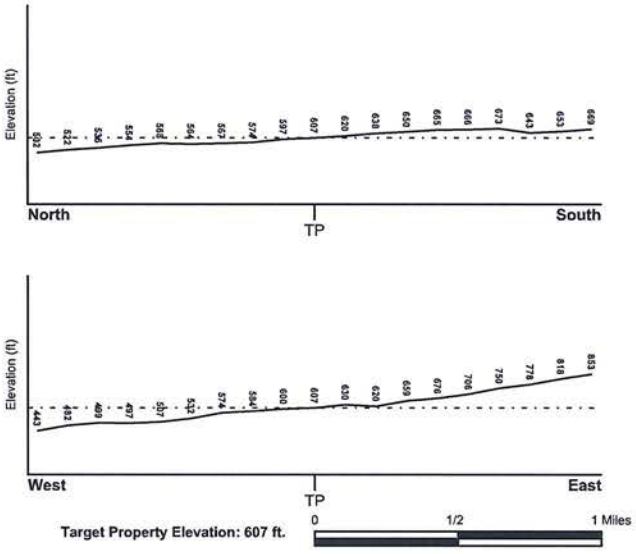
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General NW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
1500030580F	FEMA FIRM Flood data
Additional Panels in search area:	**FEMA Source Type**
1500030585E	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
NOT AVAILABLE	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

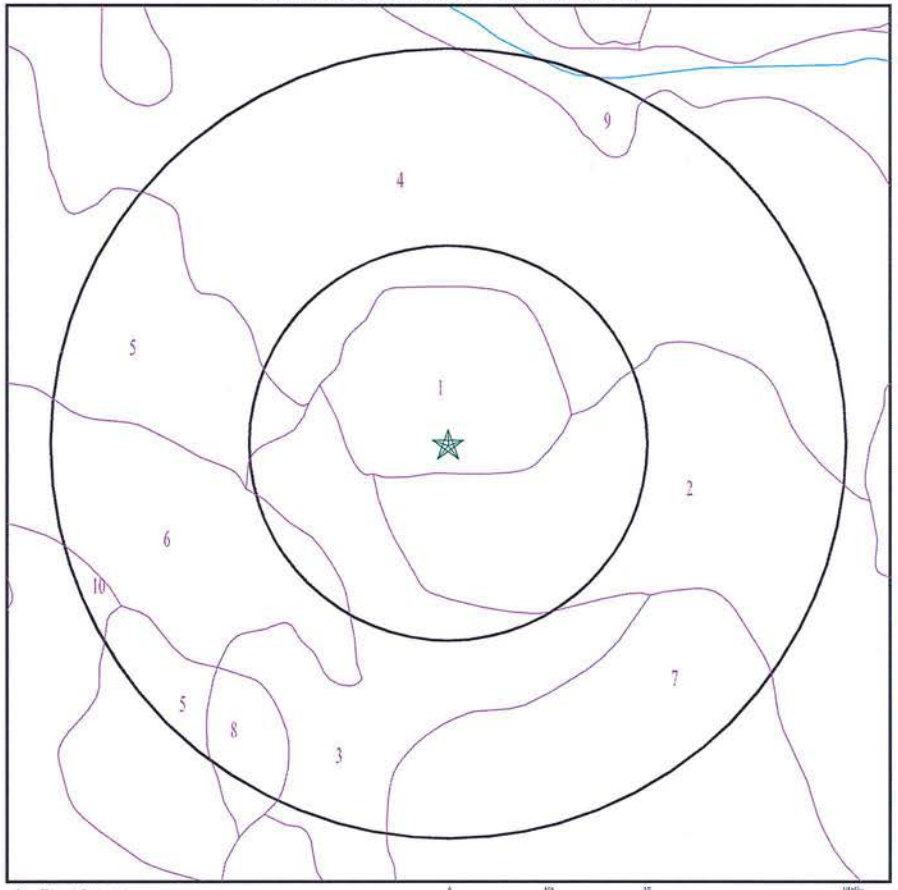
Era: -
System: -
Series: -
Code: N/A *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: -

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 4748534.12s



SITE NAME: Field 411	CLIENT: Enviro Srvcs. and Trng. Center
ADDRESS: Not Reported Kihei HI 96753	CONTACT: Sharla Nakashima INQUIRY #: 4748534.12s
LAT/LONG: 20.802742 / 156.403207	DATE: October 07, 2016 9:43 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Keahua

Soil Surface Texture: silty clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	CL-K (proposed)	Max: 42 Min: 4.23	Max: 6.5 Min: 6.1
2	9 inches	33 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	CL-K (proposed)	Max: 14.11 Min: 1.41	Max: 6.5 Min: 6.1
3	33 inches	61 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	CL-K (proposed)	Max: 4.23 Min: 1.41	Max: 7.3 Min: 6.6

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
4	61 inches	70 inches	very gravelly clay loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14.11 Min: 1.41	Max: 7.3 Min: 6.6

Soil Map ID: 2

Soil Component Name: Keahua

Soil Surface Texture: very stony silty clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	very stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 42 Min: 4.23	Max: 6.5 Min: 6.1
2	9 inches	33 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 1.41	Max: 7.3 Min: 6.6

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
3	33 inches	61 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 4.23 Min: 1.41	Max: 7.3 Min: 6.6
4	61 inches	70 inches	extremely gravelly clay loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 1.41	Max: 7.3 Min: 6.6

Soil Map ID: 3

Soil Component Name: Pulehu

Soil Surface Texture: cobbly silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	20 inches	cobbly silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4.23	Max: 7.3 Min: 6.6

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	20 inches	59 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141.14 Min: 14.11	Max: 7.8 Min: 6.6

Soil Map ID: 4

Soil Component Name: Keahua

Soil Surface Texture: cobbly silty clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	cobbly silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42.34 Min: 4.23	Max: 6.5 Min: 6.1
2	9 inches	33 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14.11 Min: 1.41	Max: 7.3 Min: 6.6

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
3	33 inches	61 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 4.23 Min: 1.41	Max: 7.3 Min: 6.6
4	61 inches	70 inches	extremely gravelly clay loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 1.41	Max: 7.3 Min: 6.6

Soil Map ID: 5

Soil Component Name: Waiakoa

Soil Surface Texture: very stony silty clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 84 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	1 inches	very stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 4.23	Max: 7.3 Min: 6.6

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	1 inches	25 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 4.23	Max: 7.3 Min: 6.1
3	25 inches	33 inches	stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 42.34 Min: 4.23	Max: 8.4 Min: 7.4
4	33 inches	37 inches	bedrock	Not reported	Not reported	Max: 0.42 Min: 0.02	Max: Min:

Soil Map ID: 6

Soil Component Name: Waiakoa

Soil Surface Texture: extremely stony silty clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 84 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	1 inches	extremely stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 4.23	Max: 7.3 Min: 6.6

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	1 inches	25 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 4.23	Max: 7.3 Min: 6.1
3	25 inches	33 inches	stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 42.34 Min: 4.23	Max: 8.4 Min: 7.4
4	33 inches	37 inches	bedrock	Not reported	Not reported	Max: 0.42 Min: 0.02	Max: Min:

Soil Map ID: 7

Soil Component Name: Pulehu

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	20 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4.23	Max: 7.3 Min: 6.6

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	20 inches	59 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141.14 Min: 14.11	Max: 7.8 Min: 6.6

Soil Map ID: 8

Soil Component Name: Alae

Soil Surface Texture: cobbly sandy loam

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	cobbly sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14.11	Max: 7.3 Min: 6.6
2	7 inches	14 inches	stratified sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14.11	Max: 7.8 Min: 7.4

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
3	14 inches	55 inches	gravelly coarse sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel. COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel.	Max: 141 Min: 14.11	Max: 8.4 Min: 7.9

Soil Map ID: 9

Soil Component Name: Alae

Soil Surface Texture: sandy loam

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14.11	Max: 7.8 Min: 7.4

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	7 inches	14 inches	stratified sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14.11	Max: 7.8 Min: 7.4
3	14 inches	55 inches	gravelly coarse sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel. COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel.	Max: 141 Min: 14.11	Max: 8.4 Min: 7.9

Soil Map ID: 10

Soil Component Name: Waiakoa

Soil Surface Texture: silty clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 84 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	1 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel. COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel.	Max: 14 Min: 4.23	Max: 7.3 Min: 6.6

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	1 inches	25 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel. COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel.	Max: 14 Min: 4.23	Max: 7.3 Min: 6.1
3	25 inches	33 inches	stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel. COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel.	Max: 42.34 Min: 4.23	Max: 8.4 Min: 7.4
4	33 inches	37 inches	bedrock	Not reported	Not reported	Max: 0.42 Min: 0.02	Max: Min:

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 0.001 miles
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A2	USGS40000268946	0 - 1/8 Mile North

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

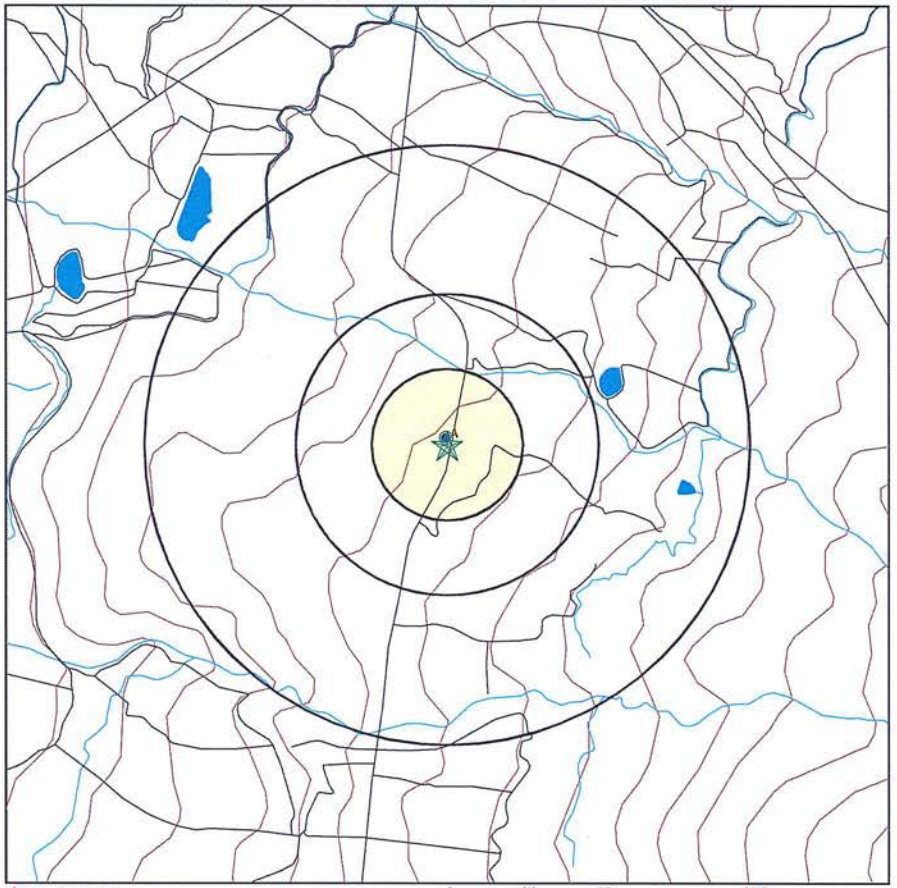
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A1	HI9000000003230	0 - 1/8 Mile NNW

PHYSICAL SETTING SOURCE MAP - 4748534.12s



SITE NAME: Field 411	CLIENT: Enviro Srvcs. and Trng. Center
ADDRESS: Not Reported Kihei HI 96753	CONTACT: Sharla Nakashima
LAT/LONG: 20.802742 / 156.403207	INQUIRY #: 4748534.12s DATE: October 07, 2016 9:42 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

	Database	EDR ID Number
A1	**HI WELLS**	**HI9000000003230**
NNW		
0 - 1/8 Mile		
Lower		

Wid:	6-4824-001	Island:	Maui
Well name:	Kihei Exploratory	Old name:	Not Reported
Yr drilled:	1971		
Driller:	Roscoe Moss Hawaii Inc		
Quad map:	8		
Long83dd:	-156.403333		
Lat83dd:	20.803056		
Gps:	-1	Utm:	0
Owner user:	Land Division Oahu, DLNR-LD		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	258-	Well type:	PER
Casing dia:	12	Ground el:	593
Well depth:	640		
Solid case:	597	Perf case:	637
Use:	UNU - Unused		
Use year:	Not Reported		
Init head:	4.36	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	55		
Test date:	3/15/1971	Test gpm:	700
Test ddown:	10.8	Test chlor:	69
Test temp:	23.3	Test unit:	C
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	THO		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-47
Bot solid:	-4	Bot perf:	-44
Spec capac:	65		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(2) 2-5-001:010
Aqui code:	60302		
Latest hd:	Not Reported	Wcr:	25-MAR-71
Pir:	Not Reported		
Surveyor:	Norman Saito		
T:	Not Reported	Site id:	HI9000000003230

	Database	EDR ID Number
A2	**FED USGS**	**USGS40000268946**
North		
0 - 1/8 Mile		
Higher		

Org. identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc identifier:	USGS-204827156242201		
Monloc name:	6-4824-01 Kihei Exploratory Well, Maui, HI		
Monloc type:	Well		
Monloc desc:	former local no. W258		
Huc code:	20020000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	20.8031
Longitude:	-156.4031917	Sourcemap scale:	24000

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Global positioning system (GPS), uncorrected		
Horiz coord refsys:	NAD83	Vert measure val:	593.0
Vert measure units:	feet	Vertacc measure val:	.1
Vert accmeasure units:	feet		
Vertcollection method:	Level or other surveying method		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Hawaii volcanic-rock aquifers		
Formation type:	Honomanu Volcanic Series, Lava Flows		
Aquifer type:	Not Reported		
Construction date:	19710301	Welldepth:	646
Welldepth units:	ft	Wellholedepth:	646
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 56

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2004-08-18		4.05	2004-05-13		4.66
2004-04-02		4.49	2004-02-10		4.29
2004-01-07		4.44	2003-10-23		4.05
2003-08-26		4.14			
2003-07-16		4.05			
Note: Other conditions existed that would affect the measured water level.					
2003-04-29		3.96			
Note: Other conditions existed that would affect the measured water level.					
2003-02-10		3.99			
Note: Other conditions existed that would affect the measured water level.					
2002-12-19		3.96			
Note: A nearby site that taps the same aquifer was being pumped.					
2002-10-11		4.09			
Note: Other conditions existed that would affect the measured water level.					
2002-08-02		3.89			
Note: Other conditions existed that would affect the measured water level.					
2002-06-18		3.93			
Note: Other conditions existed that would affect the measured water level.					
2002-05-09		4.01			
Note: Other conditions existed that would affect the measured water level.					
2002-02-12		4.14			
Note: Other conditions existed that would affect the measured water level.					
2001-12-03		4.28			
Note: Other conditions existed that would affect the measured water level.					
2001-10-29		3.90			
Note: Other conditions existed that would affect the measured water level.					
2001-08-17		4.02	2001-06-26		3.83
2001-05-24		3.84	2001-02-23		3.98
2001-01-04		4.10	2000-10-26		3.92
2000-08-22		3.74	2000-06-14		3.58
2000-04-26		3.92	2000-01-31		3.96
1999-11-23		4.00	1999-10-07		3.99
1999-07-30		3.82	1999-05-25		4.03
1999-02-09		4.31	1998-12-04		4.04
1998-09-04		4.30	1998-06-24		4.10
1998-05-08		4.09	1998-02-24		4.30
1998-01-16		4.29	1997-10-24		4.19
1979-10-25	590.77				
Note: Other conditions existed that would affect the measured water level.					
1979-08-22	590.62				
Note: Other conditions existed that would affect the measured water level.					

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Ground-water levels, continued.

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1979-06-27	590.81				
Note: Other conditions existed that would affect the measured water level.					
1979-05-02	590.21				
Note: Other conditions existed that would affect the measured water level.					
1979-03-15	591.06				
Note: Other conditions existed that would affect the measured water level.					
1979-01-26	590.11				
Note: Other conditions existed that would affect the measured water level.					
1978-12-15	590.12				
Note: Other conditions existed that would affect the measured water level.					
1978-10-24	590.52				
Note: Other conditions existed that would affect the measured water level.					
1978-08-09	590.48				
Note: Other conditions existed that would affect the measured water level.					
1978-06-21	590.92				
Note: Other conditions existed that would affect the measured water level.					
1978-05-09	591.02				
Note: Other conditions existed that would affect the measured water level.					
1978-03-17	590.95				
Note: Other conditions existed that would affect the measured water level.					
1978-01-27	590.63				
Note: Other conditions existed that would affect the measured water level.					
1977-12-20	590.93				
Note: Other conditions existed that would affect the measured water level.					
1977-10-20	590.40				
Note: Other conditions existed that would affect the measured water level.					
1972-05-09	590.46				

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for MAUI County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 96753

Number of sites tested: 10

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.010 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory
Source: Office of Planning
Telephone: 808-587-2895

HYDROGEOLOGIC INFORMATION

AQUIFLOW[R] Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Well Index Database
Source: Commission on Water Resource Management
Telephone: 808-587-0214
CWRM maintains a Well Index Database to track specific information pertaining to the construction and installation of production wells in Hawaii

OTHER STATE DATABASE INFORMATION

RADON

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STREET AND ADDRESS INFORMATION

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Fields 501/502 and 604
LANA ST
Kihei, HI 96753

Inquiry Number: 4748534.2s
October 07, 2016

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

LANA ST
KIHEI, HI 96753

COORDINATES

Latitude (North):	20.8769400 - 20° 52' 36.98"
Longitude (West):	156.4061090 - 156° 24' 21.99"
Universal Tranverse Mercator:	Zone 4
UTM X (Meters):	769873.8
UTM Y (Meters):	2310570.0
Elevation:	190 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5941605 PAIA, HI
Version Date:	2013
South Map:	5941643 PUU O KALI, HI
Version Date:	2013

MAPPED SITES SUMMARY

Target Property Address:
LANA ST
KIHEI, HI 96753

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
1	ROJAC TRUCKING	591 HALEAKALA HWY	LUST, UST	Higher	479, 0.091, ESE

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

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

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites
NPL LIENS..... Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL..... National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY..... Federal Facility Site Information listing
SEMS..... Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE..... Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG..... RCRA - Large Quantity Generators
RCRA-SQG..... RCRA - Small Quantity Generators
RCRA-CESQG..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS..... Land Use Control Information System
US ENG CONTROLS..... Engineering Controls Sites List

US INST CONTROL..... Sites with Institutional Controls

Federal ERNS list

ERNS..... Emergency Response Notification System

State- and tribal - equivalent CERCLIS

SHWS..... Sites List

State and tribal landfill and/or solid waste disposal site lists

SWF/LF..... Permitted Landfills in the State of Hawaii

State and tribal leaking storage tank lists

INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

FEMA UST..... Underground Storage Tank Listing
INDIAN UST..... Underground Storage Tanks on Indian Land

State and tribal institutional control / engineering control registries

ENG CONTROLS..... Engineering Control Sites
INST CONTROL..... Sites with Institutional Controls

State and tribal voluntary cleanup sites

VCP..... Voluntary Response Program Sites
INDIAN VCP..... Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

BROWNFIELDS..... Brownfields Sites

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands
ODI..... Open Dump Inventory
DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL..... Delisted National Clandestine Laboratory Register
CDL..... Clandestine Drug Lab Listing
US CDL..... National Clandestine Laboratory Register

Local Land Records

LIENS 2..... CERCLA Lien Information

Records of Emergency Release Reports

HMIRS..... Hazardous Materials Information Reporting System
SPILLS..... Release Notifications
SPILLS 90..... SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR..... RCRA - Non Generators / No Longer Regulated
FUDS..... Formerly Used Defense Sites
DOD..... Department of Defense Sites
SCRD DRYCLEANERS..... State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR..... Financial Assurance Information
EPA WATCH LIST..... EPA WATCH LIST
2020 COR ACTION..... 2020 Corrective Action Program List
TSCA..... Toxic Substances Control Act
TRIS..... Toxic Chemical Release Inventory System
SSTS..... Section 7 Tracking Systems
ROD..... Records Of Decision
RMP..... Risk Management Plans
RAATS..... RCRA Administrative Action Tracking System
PRP..... Potentially Responsible Parties
PADS..... PCB Activity Database System
ICIS..... Integrated Compliance Information System
FTTS..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS..... Material Licensing Tracking System
COAL ASH DOE..... Steam-Electric Plant Operation Data
COAL ASH EPA..... Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER..... PCB Transformer Registration Database
RADINFO..... Radiation Information Database
HIST FTTS..... FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS..... Incident and Accident Data
CONSENT..... Superfund (CERCLA) Consent Decrees
INDIAN RESERV..... Indian Reservations
FUSRAP..... Formerly Utilized Sites Remedial Action Program
UMTRA..... Uranium Mill Tailings Sites
LEAD SMELTERS..... Lead Smelter Sites
US AIRS..... Aerometric Information Retrieval System Facility Subsystem
US MINES..... Mines Master Index File
FINDS..... Facility Index System/Facility Registry System
UXO..... Unexploded Ordnance Sites
DOCKET HWC..... Hazardous Waste Compliance Docket Listing
AIRS..... List of Permitted Facilities
DRYCLEANERS..... Permitted Drycleaner Facility Listing
Financial Assurance..... Financial Assurance Information Listing
UIC..... Underground Injection Wells Listing
FUELS PROGRAM..... EPA Fuels Program Registered Listing
ECHO..... Enforcement & Compliance History Information

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP..... EDR Proprietary Manufactured Gas Plants

EDR Hist Auto..... EDR Exclusive Historic Gas Stations
EDR Hist Cleaner..... EDR Exclusive Historic Dry Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS..... Recovered Government Archive State Hazardous Waste Facilities List
RGA LF..... Recovered Government Archive Solid Waste Facilities List
RGA LUST..... Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

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

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

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

STANDARD ENVIRONMENTAL RECORDS

State and tribal leaking storage tank lists

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

A review of the LUST list, as provided by EDR, and dated 01/13/2016 has revealed that there is 1 LUST site within approximately 0.625 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ROJAC TRUCKING	***591 HALEAKALA HWY***	***ESE 0 - 1/8 (0.091 mi.)***	***1***	***8***
Release ID: 950051				
Facility Id: 9-503008				
Facility Status: Site Cleanup Completed (NFA)				

State and tribal registered storage tank lists

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Health's Listing of Underground Storage Tanks.

A review of the UST list, as provided by EDR, and dated 01/13/2016 has revealed that there is 1 UST

site within approximately 0.375 miles of the target property.

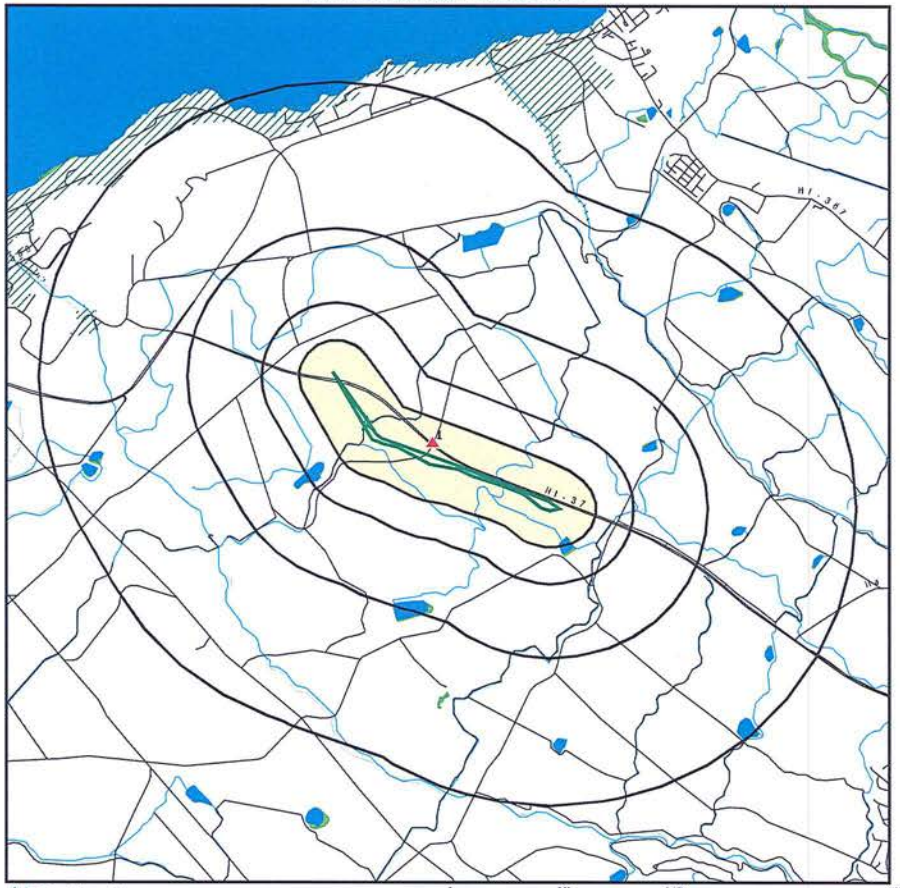
Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ROJAC TRUCKING	***591 HALEAKALA HWY***	***ESE 0 - 1/8 (0.091 mi.)***	***1***	***8***
Tank Status: Permanently Out of Use				
Facility Id: 9-503008				
Date Closed: 02/02/1995				

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 6 records.

Site Name	Database(s)
MECO STATION-CLASS TRANSFORMER NO.	SHWS, SPILLS
MECO PAD-MOUNT TRANSFORMER NO. 137	SHWS
CENTRAL POWER PLANT ELECTRICAL SUB	SHWS, INST CONTROL
MAUI PINEAPPLE CO LTD, SEED TREATM	SHWS
A&B CENTRAL POWER PLANT PIPELINES	SHWS
A&B PROPERTIES, INC., SUSPECTED FO	SHWS

OVERVIEW MAP - 4748534.2S



Target Property
Sites at elevations higher than or equal to the target property
Sites at elevations lower than the target property
Manufactured Gas Plants
National Priority List Sites
Dept. Defense Sites

Indian Reservations BIA
100-year flood zone
500-year flood zone
National Wetland Inventory
State Wetlands

0 3/4 1 1/2 3 Miles

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

SITE NAME: Fields 501/502 and 604	CLIENT: Enviro Srvcs. and Trng. Center
ADDRESS: LANA ST Kihei HI 96753	CONTACT: Sharla Nakashima
LAT/LONG: 20.87694 / 156.406109	INQUIRY #: 4748534.2s DATE: October 07, 2016 9:46 pm

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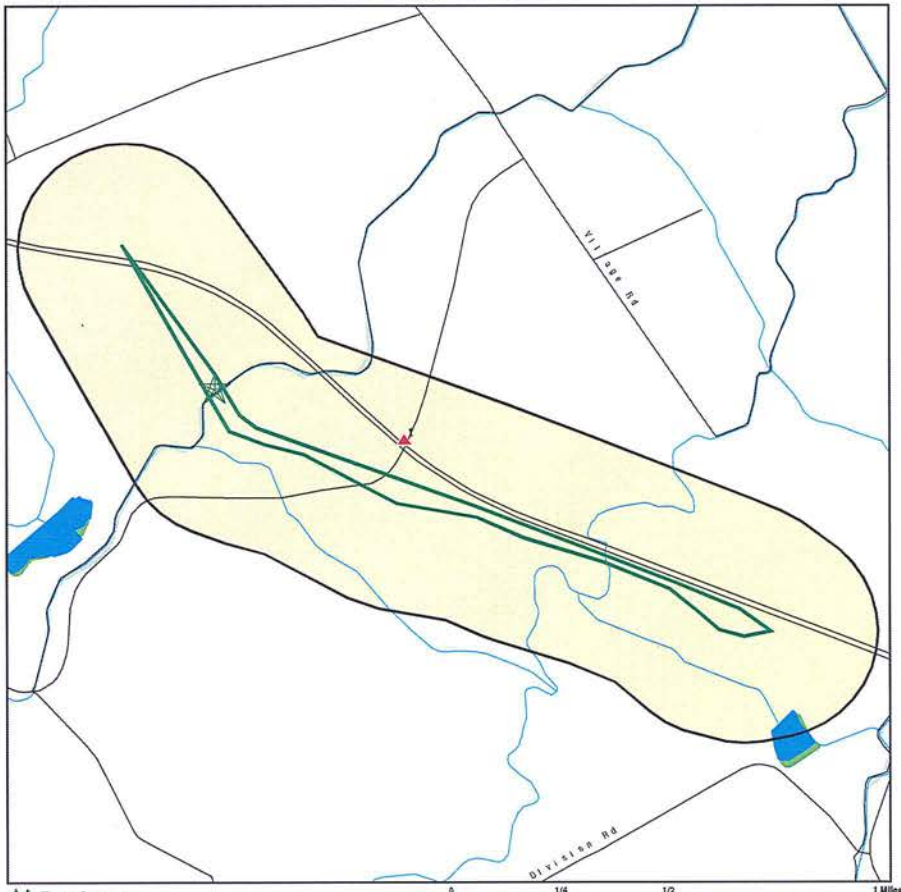
DETAIL MAP - 4748534.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands

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

SITE NAME: Fields 501/502 and 604	CLIENT: Enviro Srvcs. and Trng. Center
ADDRESS: LANA ST Kihei HI 96753	CONTACT: Sharla Nakashima
LAT/LONG: 20.87694 / 156.406109	INQUIRY #: 4748534.2s DATE: October 07, 2016 9:47 pm

Copyright © 2016 EDR, Inc. © 2015 TomTom Rel. 2015.

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.125		0	0	0	0	0	0
Proposed NPL	1.125		0	0	0	0	0	0
NPL LIENS	0.125		0	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.125		0	0	0	0	0	0
Federal CERCLIS list								
FEDERAL FACILITY	0.625		0	0	0	0	NR	0
SEMS	0.625		0	0	0	0	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.625		0	0	0	0	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.125		0	0	0	0	0	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.625		0	0	0	0	NR	0
Federal RCRA generators list								
RCRA-LQG	0.375		0	0	0	NR	NR	0
RCRA-SQG	0.375		0	0	0	NR	NR	0
RCRA-CESQG	0.375		0	0	0	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.625		0	0	0	0	NR	0
US ENG CONTROLS	0.625		0	0	0	0	NR	0
US INST CONTROL	0.625		0	0	0	0	NR	0
Federal ERNS list								
ERNS	0.125		0	NR	NR	NR	NR	0
State- and tribal - equivalent CERCLIS								
SHWS	1.125		0	0	0	0	0	0
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.625		0	0	0	0	NR	0
State and tribal leaking storage tank lists								
LUST	0.625		1	0	0	0	NR	1
INDIAN LUST	0.625		0	0	0	0	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.375		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
UST	0.375		1	0	0	NR	NR	1
INDIAN UST	0.375		0	0	0	NR	NR	0
State and tribal institutional control / engineering control registries								
ENG CONTROLS	0.625		0	0	0	0	NR	0
INST CONTROL	0.625		0	0	0	0	NR	0
State and tribal voluntary cleanup sites								
VCP	0.625		0	0	0	0	NR	0
INDIAN VCP	0.625		0	0	0	0	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.625		0	0	0	0	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.625		0	0	0	0	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
INDIAN ODI	0.625		0	0	0	0	NR	0
ODI	0.625		0	0	0	0	NR	0
DEBRIS REGION 9	0.625		0	0	0	0	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.125		0	NR	NR	NR	NR	0
CDL	0.125		0	NR	NR	NR	NR	0
US CDL	0.125		0	NR	NR	NR	NR	0
Local Land Records								
LIENS 2	0.125		0	NR	NR	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.125		0	NR	NR	NR	NR	0
SPILLS	0.125		0	NR	NR	NR	NR	0
SPILLS 90	0.125		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.375		0	0	0	NR	NR	0
FUDS	1.125		0	0	0	0	0	0
DOD	1.125		0	0	0	0	0	0
SCRD DRYCLEANERS	0.625		0	0	0	0	NR	0
US FIN ASSUR	0.125		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.125		0	NR	NR	NR	NR	0
2020 COR ACTION	0.375		0	0	0	NR	NR	0
TSCA	0.125		0	NR	NR	NR	NR	0
TRIS	0.125		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
SSTS	0.125		0	NR	NR	NR	NR	0
ROD	1.125		0	0	0	0	0	0
RMP	0.125		0	NR	NR	NR	NR	0
RAATS	0.125		0	NR	NR	NR	NR	0
PRP	0.125		0	NR	NR	NR	NR	0
PADS	0.125		0	NR	NR	NR	NR	0
ICIS	0.125		0	NR	NR	NR	NR	0
FTTS	0.125		0	NR	NR	NR	NR	0
MLTS	0.125		0	NR	NR	NR	NR	0
COAL ASH DOE	0.125		0	NR	NR	NR	NR	0
COAL ASH EPA	0.625		0	0	0	0	NR	0
PCB TRANSFORMER	0.125		0	NR	NR	NR	NR	0
RADINFO	0.125		0	NR	NR	NR	NR	0
HIST FTTS	0.125		0	NR	NR	NR	NR	0
DOT OPS	0.125		0	NR	NR	NR	NR	0
CONSENT	1.125		0	0	0	0	0	0
INDIAN RESERV	1.125		0	0	0	0	0	0
FUSRAP	1.125		0	0	0	0	0	0
UMTRA	0.625		0	0	0	0	NR	0
LEAD SMELTERS	0.125		0	NR	NR	NR	NR	0
US AIRS	0.125		0	NR	NR	NR	NR	0
US MINES	0.375		0	0	0	NR	NR	0
FINDS	0.125		0	NR	NR	NR	NR	0
UXO	1.125		0	0	0	0	0	0
DOCKET HWC	0.125		0	NR	NR	NR	NR	0
AIRS	0.125		0	NR	NR	NR	NR	0
DRYCLEANERS	0.375		0	0	0	NR	NR	0
Financial Assurance	0.125		0	NR	NR	NR	NR	0
UIC	0.125		0	NR	NR	NR	NR	0
FUELS PROGRAM	0.375		0	0	0	NR	NR	0
ECHO	0.125		0	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.125		0	0	0	0	0	0
EDR Hist Auto	0.250		0	0	NR	NR	NR	0
EDR Hist Cleaner	0.250		0	0	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA HWS	0.125		0	NR	NR	NR	NR	0
RGA LF	0.125		0	NR	NR	NR	NR	0
RGA LUST	0.125		0	NR	NR	NR	NR	0
- Totals --		0	2	0	0	0	0	2

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS

Map ID / Direction / Distance / Elevation	Site	Database(s)	EDR ID Number / EPA ID Number

1
ESE
< 1/8
0.091 mi.
479 ft.

ROJAC TRUCKING
591 HALEAKALA HWY
PAIA, HI 96779

LUST
UST

U003155141
N/A

Relative:
Higher

Actual:
240 ft.

LUST:

Facility ID:	9-503008
Facility Status:	Site Cleanup Completed (NFA)
Facility Status Date:	07/12/2001
Release ID:	950051
Project Officer:	Mark Sutterfield

UST:

Facility ID:	9-503008
Owner:	A & B PROPERTIES, INC.
Owner Address:	822 BISHOP ST
Owner City,St,Zip:	Paia, 96779 96779
Latitude:	20.875148
Longitude:	-156.399295
Horizontal Reference Datum Name:	NAD83
Horizontal Collection Method Name:	Zip Code
Tank ID:	R-1
Date Installed:	Not reported
Tank Status:	**Permanently Out of Use**
Date Closed:	02/02/1995
Tank Capacity:	2000
Substance:	Gasoline

ORPHAN SUMMARY

Count: 6 records.

City	EDR ID	Site Name	Site Address	Zip	Database(s)
KAHULUI	S113230501	MECO STATION-CLASS TRANSFORMER NO.	DAIRY RD SE CORNER OF HANA HWY	96732	SHWS, SPILLS
KAHULUI	S113230485	MECO PAD-MOUNT TRANSFORMER NO. 137	DAIRY RD & HANA HWY	96732	SHWS
KAHULUI	S110061386	CENTRAL POWER PLANT ELECTRICAL SUB	HALEAKALA HWY		SHWS, INST CONTROL
KAHULUI	S111704793	MAUI PINEAPPLE CO LTD, SEED TREATM	HALEAKALA HWY		SHWS
KAHULUI	S111704662	A&B CENTRAL POWER PLANT PIPELINES	HALEAKALA HWY		SHWS
KAHULUI	S115488672	A&B PROPERTIES, INC., SUSPECTED FO	HALEAKALA ST	96732	SHWS

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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

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

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

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

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10

Source: EPA
Telephone: N/A
Last EDR Contact: 10/05/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

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

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

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

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10

Source: EPA
Telephone: N/A
Last EDR Contact: 10/05/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Quarterly

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

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

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

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

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10
Source: EPA
Telephone: N/A
Last EDR Contact: 10/05/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing
A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 11/13/2015
Date Data Arrived at EDR: 01/06/2016
Date Made Active in Reports: 05/20/2016
Number of Days to Update: 135
Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 10/04/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System
SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10
Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 07/22/2016
Next Scheduled EDR Contact: 10/31/2016
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/05/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 10
Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 07/22/2016
Next Scheduled EDR Contact: 10/31/2016
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 06/27/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64
Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

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

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64
Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

Federal RCRA generators list

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

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64
Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

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

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Quarterly

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

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System
LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/28/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 13

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 08/12/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Varies

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

Date of Government Version: 05/09/2016
Date Data Arrived at EDR: 06/01/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 93

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

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

Date of Government Version: 05/09/2016
Date Data Arrived at EDR: 06/01/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 93

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal ERNS list

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

Date of Government Version: 03/28/2016
Date Data Arrived at EDR: 03/30/2016
Date Made Active in Reports: 05/20/2016
Number of Days to Update: 51

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Annually

State- and tribal - equivalent CERCLIS

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

Date of Government Version: 05/06/2016
Date Data Arrived at EDR: 05/25/2016
Date Made Active in Reports: 08/02/2016
Number of Days to Update: 69

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Semi-Annually

State and tribal landfill and/or solid waste disposal site lists

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

Date of Government Version: 09/17/2012
Date Data Arrived at EDR: 04/03/2013
Date Made Active in Reports: 05/10/2013
Number of Days to Update: 37

Source: Department of Health
Telephone: 808-586-4245
Last EDR Contact: 09/30/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

State and tribal leaking storage tank lists

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

Date of Government Version: 01/13/2016
Date Data Arrived at EDR: 01/15/2016
Date Made Active in Reports: 03/02/2016
Number of Days to Update: 47

Source: Department of Health
Telephone: 808-586-4228
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Semi-Annually

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 02/17/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 37

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 01/07/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 41
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 10/09/2015
Date Data Arrived at EDR: 02/12/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 112
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/13/2015
Date Data Arrived at EDR: 10/23/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 118
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 02/25/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 37
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/27/2015
Date Data Arrived at EDR: 10/29/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 67
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/29/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 02/05/2016
Date Data Arrived at EDR: 04/29/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 35
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 07/26/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Semi-Annually

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 12/11/2015
Date Data Arrived at EDR: 02/19/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 105
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Varies

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

Date of Government Version: 01/13/2016
Date Data Arrived at EDR: 01/15/2016
Date Made Active in Reports: 03/02/2016
Number of Days to Update: 47
Source: Department of Health
Telephone: 808-586-4228
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Semi-Annually

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 01/07/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 41
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 02/25/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 37
Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 01/26/2016
Date Data Arrived at EDR: 02/05/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 119
Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Quarterly

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/29/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 67
Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/29/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 12/03/2015
Date Data Arrived at EDR: 02/04/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 120
Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 11/05/2015
Date Data Arrived at EDR: 11/13/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 52
Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 02/05/2016
Date Data Arrived at EDR: 04/29/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 35
Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 07/26/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Semi-Annually

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/23/2014
Date Data Arrived at EDR: 11/25/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 65
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/27/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

State and tribal institutional control / engineering control registries

ENG CONTROLS: Engineering Control Sites
A listing of sites with engineering controls in place.

Date of Government Version: 05/06/2016
Date Data Arrived at EDR: 05/25/2016
Date Made Active in Reports: 08/02/2016
Number of Days to Update: 69
Source: Department of Health
Telephone: 404-586-4249
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

INST CONTROL: Sites with Institutional Controls
Voluntary Remediation Program and Brownfields sites with institutional controls in place.

Date of Government Version: 05/06/2016
Date Data Arrived at EDR: 05/25/2016
Date Made Active in Reports: 08/02/2016
Number of Days to Update: 69
Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142
Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27
Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

VCP: Voluntary Response Program Sites
Sites participating in the Voluntary Response Program. The purpose of the VRP is to streamline the cleanup process in a way that will encourage prospective developers, lenders, and purchasers to voluntarily cleanup properties.

Date of Government Version: 05/06/2016
Date Data Arrived at EDR: 05/25/2016
Date Made Active in Reports: 08/02/2016
Number of Days to Update: 69
Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Brownfields Sites
With certain legal exclusions and additions, the term 'brownfield site' means real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.

Date of Government Version: 05/06/2016
Date Data Arrived at EDR: 05/25/2016
Date Made Active in Reports: 08/02/2016
Number of Days to Update: 69
Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/22/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 72
Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 09/21/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52
Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 08/05/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Varies

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

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39
Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137
Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 07/20/2016
Next Scheduled EDR Contact: 10/07/2016
Data Release Frequency: No Update Planned

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register
A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 08/31/2016
Date Data Arrived at EDR: 09/06/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 17
Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 10/10/2016
Data Release Frequency: No Update Planned

CDL: Clandestine Drug Lab Listing
A listing of clandestine drug lab site locations.

Date of Government Version: 08/04/2010
Date Data Arrived at EDR: 09/10/2010
Date Made Active in Reports: 10/22/2010
Number of Days to Update: 42
Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

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

Date of Government Version: 08/30/2016
Date Data Arrived at EDR: 09/06/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 17
Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Quarterly

Local Land Records

LIENS 2: CERCLA Lien Information
A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/18/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37
Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 07/29/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

Records of Emergency Release Reports

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

Date of Government Version: 06/27/2016
Date Data Arrived at EDR: 06/28/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 87
Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 09/27/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Annually

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

Date of Government Version: 01/14/2016
Date Data Arrived at EDR: 02/24/2016
Date Made Active in Reports: 04/06/2016
Number of Days to Update: 42
Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

SPILLS 90: SPILLS90 data from FirstSearch
Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 03/10/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/11/2013
Number of Days to Update: 39
Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/30/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/28/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

FUDS: Formerly Used Defense Sites

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

Date of Government Version: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 09/09/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Varies

DOD: Department of Defense Sites

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

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

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

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

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 08/15/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 05/08/2016
Date Data Arrived at EDR: 05/18/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 107

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 08/08/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 09/06/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

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

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 01/15/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 14

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 09/23/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

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

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 133

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

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

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 07/25/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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

Date of Government Version: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74
Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 09/09/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Annually

RMP: Risk Management Plans
When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 05/01/2016
Date Data Arrived at EDR: 05/26/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 99
Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 07/25/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

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

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35
Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3
Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 08/12/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

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

Date of Government Version: 01/20/2016
Date Data Arrived at EDR: 04/28/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 127
Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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

Date of Government Version: 01/23/2015
Date Data Arrived at EDR: 02/06/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 31
Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/17/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Quarterly

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

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 03/18/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 28
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 09/05/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 09/09/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 09/06/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 07/29/2016
Next Scheduled EDR Contact: 11/07/2016
Data Release Frequency: Varies

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

Date of Government Version: 07/07/2015
Date Data Arrived at EDR: 07/09/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 69
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 10/05/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Quarterly

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

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

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

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data
Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42
Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 08/02/2016
Next Scheduled EDR Contact: 11/14/2016
Data Release Frequency: Varies

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

Date of Government Version: 03/31/2016
Date Data Arrived at EDR: 08/01/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 53
Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Varies

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

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 02/24/2015
Date Made Active in Reports: 09/30/2015
Number of Days to Update: 218
Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 08/26/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations
This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34
Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program
DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 07/21/2016
Date Data Arrived at EDR: 07/26/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 59
Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 07/26/2016
Next Scheduled EDR Contact: 11/21/2016
Data Release Frequency: Varies

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

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146
Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 09/09/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites
A listing of former lead smelter site locations.

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/07/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 148
Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites
A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)
The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/27/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 69

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/27/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 69

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 01/09/2017
Data Release Frequency: Annually

US MINES: Mines Master Index File
Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/05/2016
Date Data Arrived at EDR: 09/01/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 22

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 09/01/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing
This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 09/02/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing
Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 09/02/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

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

Date of Government Version: 07/20/2015
Date Data Arrived at EDR: 09/09/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 55

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 09/07/2016
Next Scheduled EDR Contact: 12/19/2016
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing
A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 06/02/2016
Date Data Arrived at EDR: 06/03/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 91

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 08/24/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

UXO: Unexploded Ordnance Sites
A listing of unexploded ordnance site locations

Date of Government Version: 10/25/2015
Date Data Arrived at EDR: 01/29/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 67

Source: Department of Defense
Telephone: 571-373-0407
Last EDR Contact: 09/19/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Varies

AIRS: List of Permitted Facilities
A listing of permitted facilities in the state.

Date of Government Version: 04/14/2016
Date Data Arrived at EDR: 04/19/2016
Date Made Active in Reports: 05/17/2016
Number of Days to Update: 28

Source: Department of Health
Telephone: 808-586-4200
Last EDR Contact: 09/29/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Varies

DRYCLEANERS: Permitted Drycleaner Facility Listing
A listing of permitted drycleaner facilities in the state.

Date of Government Version: 01/20/2016
Date Data Arrived at EDR: 04/19/2016
Date Made Active in Reports: 05/17/2016
Number of Days to Update: 28

Source: Department of Health
Telephone: 808-586-4200
Last EDR Contact: 10/03/2016
Next Scheduled EDR Contact: 01/16/2017
Data Release Frequency: Varies

Financial Assurance: Financial Assurance Information Listing
A listing of financial assurance information for underground storage tank facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 06/21/2016
Date Data Arrived at EDR: 06/24/2016
Date Made Active in Reports: 08/02/2016
Number of Days to Update: 39

Source: Department of Health
Telephone: 808-586-4226
Last EDR Contact: 09/26/2016
Next Scheduled EDR Contact: 12/26/2016
Data Release Frequency: Varies

UIC: Underground Injection Wells Listing
A listing of underground injection well locations.

Date of Government Version: 02/07/2013
Date Data Arrived at EDR: 02/12/2013
Date Made Active in Reports: 04/09/2013
Number of Days to Update: 56

Source: Department of Health
Telephone: 808-586-4258
Last EDR Contact: 08/24/2016
Next Scheduled EDR Contact: 12/12/2016
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 05/24/2016
Date Data Arrived at EDR: 05/25/2016
Date Made Active in Reports: 07/13/2016
Number of Days to Update: 49

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 08/23/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Quarterly

ECHO: Enforcement & Compliance History Information
ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 09/20/2015
Date Data Arrived at EDR: 09/23/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 103

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 09/20/2016
Next Scheduled EDR Contact: 01/02/2017
Data Release Frequency: Quarterly

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historic Gas Stations
EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historic Dry Cleaners
EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS: Recovered Government Archive State Hazardous Waste Facilities List
The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/08/2014
Number of Days to Update: 191

Source: Department of Health
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LF: Recovered Government Archive Solid Waste Facilities List
The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/17/2014
Number of Days to Update: 200

Source: Department of Health
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank
The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/03/2014
Number of Days to Update: 186

Source: Department of Health
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Oil/Gas Pipelines
Source: PennWell Corporation
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory
Source: Office of Planning
Telephone: 808-587-2895

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

FIELDS 501/502 AND 604
LANA ST
KIHEI, HI 96753

TARGET PROPERTY COORDINATES

Latitude (North):	20.87694 - 20° 52' 36.98"
Longitude (West):	156.406109 - 156° 24' 21.99"
Universal Tranverse Mercator:	Zone 4
UTM X (Meters):	769873.8
UTM Y (Meters):	2310570.0
Elevation:	190 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5941605 PAIA, HI
Version Date:	2013
South Map:	5941643 PUU O KALI, HI
Version Date:	2013

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

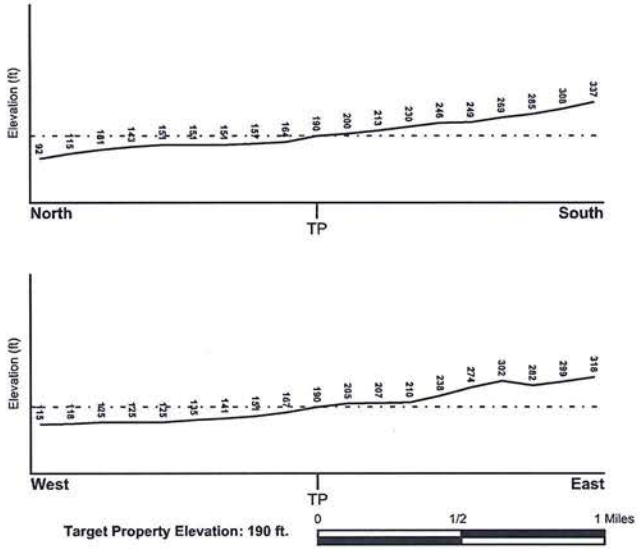
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General NW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
1500030412E	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
1500030420E	FEMA FIRM Flood data
1500030414E	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
NOT AVAILABLE	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

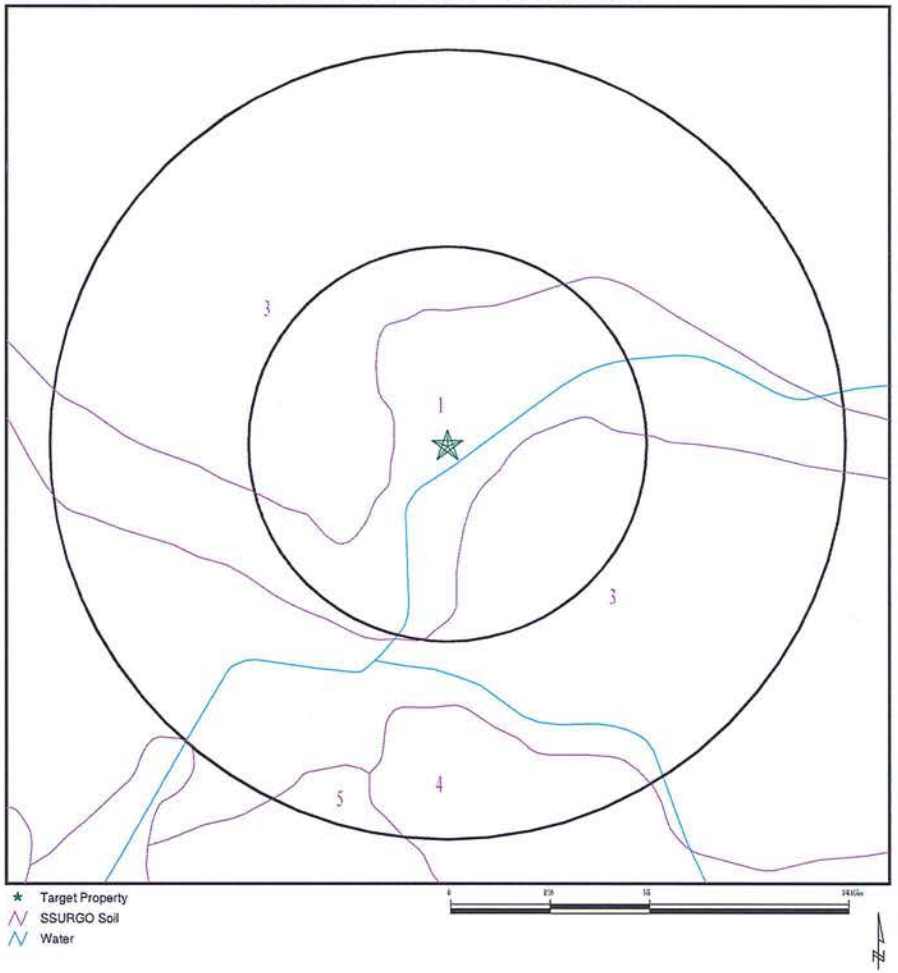
GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT		GEOLOGIC AGE IDENTIFICATION
Era:	-	Category: -
System:	-	
Series:	-	
Code:	N/A *(decoded above as Era, System & Series)*	

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 4748534.2s



SITE NAME: Fields 501/502 and 604	CLIENT: Enviro Srvcs. and Trng. Center
ADDRESS: LANA ST	CONTACT: Sharla Nakashima
Kihei HI 96753	INQUIRY #: 4748534.2s
LAT/LONG: 20.87694 / 155.406109	DATE: October 07, 2016 9:47 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Waiakoa

Soil Surface Texture: cobbly silty clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 84 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	1 inches	cobbly silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 14 Min: 4.23	Max: 7.3 Min: 6.6
2	1 inches	25 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 14 Min: 4.23	Max: 7.3 Min: 6.1
3	25 inches	33 inches	stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 42.34 Min: 4.23	Max: 8.4 Min: 7.4
4	33 inches	37 inches	bedrock	Not reported	Not reported	Max: 0.42 Min: 0.02	Max: Min:

Soil Map ID: 2

Soil Component Name: Waiakoa

Soil Surface Texture: silty clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 84 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	1 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 14 Min: 4.23	Max: 7.3 Min: 6.6
2	1 inches	25 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 14 Min: 4.23	Max: 7.3 Min: 6.1
3	25 inches	33 inches	stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 42.34 Min: 4.23	Max: 8.4 Min: 7.4
4	33 inches	37 inches	bedrock	Not reported	Not reported	Max: 0.42 Min: 0.02	Max: Min:

Soil Map ID: 3

Soil Component Name: Molokai

Soil Surface Texture: silty clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	14 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 14 Min: 4.23	Max: 7.8 Min: 6.6
2	14 inches	72 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 4.23 Min: 1.41	Max: 7.8 Min: 6.6

Soil Map ID: 4

Soil Component Name: Molokai

Soil Surface Texture: silty clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	14 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 14 Min: 4.23	Max: 7.8 Min: 6.6
2	14 inches	72 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 4.23 Min: 1.41	Max: 7.8 Min: 6.6

Soil Map ID: 5

Soil Component Name: Waiakoa

Soil Surface Texture: silty clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 84 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	1 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 14 Min: 4.23	Max: 7.3 Min: 6.6

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	1 inches	25 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 14 Min: 4.23	Max: 7.3 Min: 6.1
3	25 inches	33 inches	stony silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	ML-K (proposed)	Max: 42.34 Min: 4.23	Max: 8.4 Min: 7.4
4	33 inches	37 inches	bedrock	Not reported	Not reported	Max: 0.42 Min: 0.02	Max: Min:

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 0.001 miles
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A2	USGS40000269063	1/8 - 1/4 Mile SSE

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

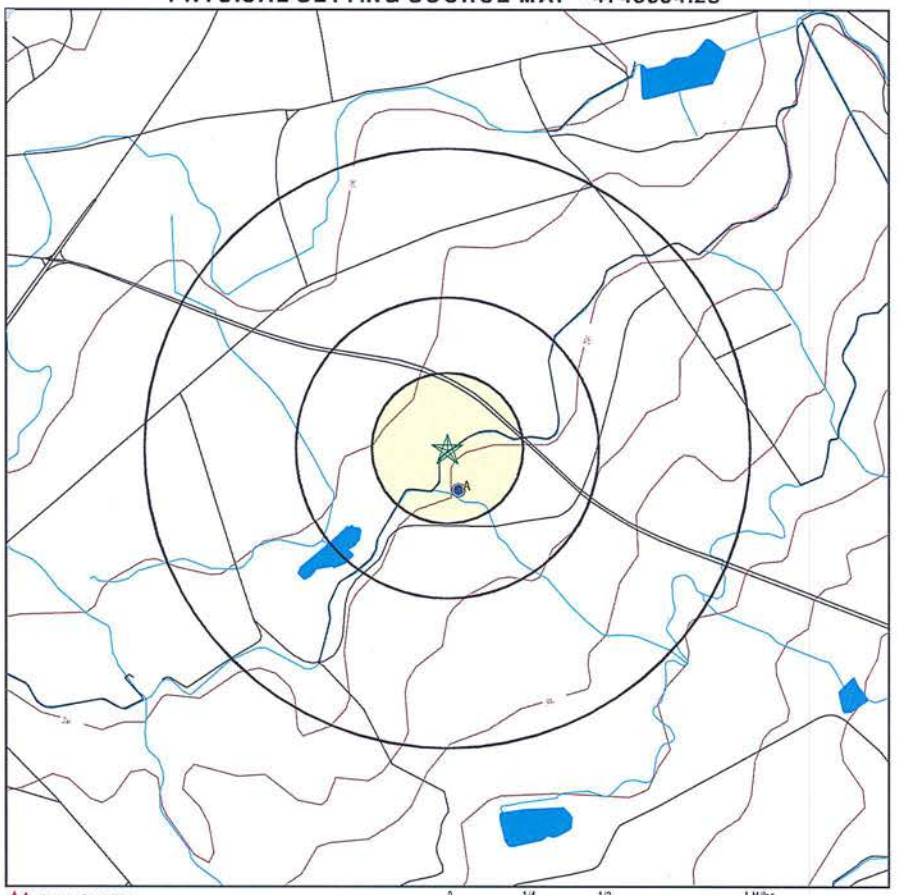
Note: PWS System location is not always the same as well location.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A1	HI9000000003317	0 - 1/8 Mile South
A3	HI9000000003316	1/8 - 1/4 Mile SSE

PHYSICAL SETTING SOURCE MAP - 4748534.2s



- County Boundary
- Major Roads
- Contour Lines
- Airports
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location

SITE NAME: Fields 501/502 and 604	CLIENT: Enviro Srvcs. and Trng. Center
ADDRESS: LANA ST	CONTACT: Sharla Nakashima
Kihei HI 96753	INQUIRY #: 4748534.2s
LAT/LONG: 20.87694 / 156.406109	DATE: October 07, 2016 9:47 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation — Database — EDR ID Number

A1
South
0 - 1/8 Mile
Higher — **HI WELLS** — **HI9000000003317**

Wid:	6-5224-002	Island:	Maui
Well name:	Puunene-Pump 9	Old name:	Not Reported
Yr drilled:	1938		
Driller:	Not Reported		
Quad map:	7		
Long83dd:	-156.406111		
Lat83dd:	20.875278		
Gps:	0	Utm:	-1
Owner user:	Hawaiian Commercial & Sugar Co. (HC&S)		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	22-SH	Well type:	SHF
Casing dia:	Not Reported	Ground el:	207
Well depth:	202		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	AGR - Crops and Processing		
Use year:	Not Reported		
Init head:	5	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	10600		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	THO		
Pump yr:	1970		
Draft yr:	Not Reported	Bot hole:	5
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	15.14		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(2) 3-8-001:000
Aqui code:	60302		
Latest hd:	Not Reported	Wcr:	01-JAN-38
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000003317

A2
SSE
1/8 - 1/4 Mile
Higher — **FED USGS** — **USGS40000269063**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-205241156242901		
Monloc name:	6-5224-01 T111		
Monloc type:	Well: Test hole not completed as a well		
Monloc desc:	Not Reported		
Huc code:	20020000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	20.8748478
Longitude:	-156.4052373	Sourcemap scale:	24000

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	193.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19360101	Welldepth:	204
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

A3
SSE
1/8 - 1/4 Mile
Higher — **HI WELLS** — **HI9000000003316**

Wid:	6-5224-001	Island:	Maui
Well name:	Haiku Ditch TH	Old name:	Pump 9
Yr drilled:	1936		
Driller:	HC&S Co.		
Quad map:	7		
Long83dd:	-156.405278		
Lat83dd:	20.874722		
Gps:	0	Utm:	-1
Owner user:	Hawaiian Commercial & Sugar Co. (HC&S)		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	22-TH	Well type:	Not Reported
Casing dia:	8	Ground el:	193
Well depth:	204		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	ABN - Lost		
Use year:	Not Reported		
Init head:	5	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	10069		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	THO		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-11
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	14.5		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(2) 3-8-001:000
Aqui code:	60302		
Latest hd:	Not Reported	Wcr:	31-JUL-12
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000003316

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for MAUI County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 96753

Number of sites tested: 10

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.010 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory
Source: Office of Planning
Telephone: 808-587-2895

HYDROGEOLOGIC INFORMATION

AQUIFLOW[R] Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digilizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Well Index Database
Source: Commission on Water Resource Management
Telephone: 808-587-0214
CWRM maintains a Well Index Database to track specific information pertaining to the construction and installation of production wells in Hawaii

OTHER STATE DATABASE INFORMATION

RADON

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STREET AND ADDRESS INFORMATION

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APPENDIX V
QUALIFICATIONS OF THE ENVIRONMENTAL PROFESSIONAL

PROFESSIONAL QUALIFICATIONS

Name: **Sharla M. Nakashima**

Title: Environmental Scientist

Education: BS, Chemistry, University of Hawaii at Manoa, 2000

Training: OSHA 40 Hour HAZWOPER
DOT Hazardous Materials Handling

Experience: EnviroServices & Training Center, LLC, Environmental Chemist, 2000 to Present.
University of Hawaii, Chemistry Department, Graduate Research Assistant, 2000.

Ms. Nakashima's primary responsibilities are conducting Phase I and II environmental site assessments. She is also the lead person to conduct data QA/QC/validation/reduction. Ms. Nakashima possesses experience in operating global positioning system (GPS) instrumentation and conducting hazardous materials inventories/classifications/ segregations/compatibility determinations.

PAST PROJECT EXPERIENCE

Sharla M. Nakashima

Phase I Environmental Site Assessments on the Islands of Oahu, Maui, Kauai, Hawaii, Lanai; Environmental Professional. Ms. Nakashima has conducted numerous Phase I environmental site assessments throughout the State of Hawaii in accordance with generally accepted Phase I industry protocol as described in the ASTM E-1527 standard and to satisfy "all appropriate inquiry" as defined in 42 United States Code (U.S.C.) §9601(35)(B). Work sites included commercial, industrial, agricultural, condemned, and residential land ranging in size from small properties (less than 2.0 acres) to larger properties (greater than 300.0 acres).

Phase II Environmental Site Assessments/Site Screening Assessments on the Islands of Oahu, Maui, Kauai, Hawaii, Lanai; Project Manager. Ms. Nakashima has performed numerous Phase II environmental site assessments and site screening assessments throughout the State of Hawaii. Projects included surface soil investigation utilizing both multi-incremental and discrete sampling protocols and subsurface soil/groundwater investigations using hand tools, direct-push rig, and hollow-stem augering techniques. Contaminants investigated included petroleum/petroleum-related compounds, heavy metals, pesticides/herbicides, PCBs, and dioxins/furans.

Phase II Environmental Site Assessments/Site Screening Activities; GPS Team Leader. Ms. Nakashima utilized Trimble Navigation Global Positioning System (GPS) instrumentation and Geographical Information Systems (GIS) applications for numerous projects to identify/locate pre-determined sample locations, document sample locations or site features, and/or identify property limits. GIS data obtained were incorporated in both the planning and reporting phases of applicable projects.

Underground Storage Tank (UST) Closure and Release Response; Environmental Scientist. Ms. Nakashima has closed numerous UST systems throughout the State of Hawaii. Closure and release response activities were performed in accordance with Hawaii Administrative Rules 11-281. Duties included coordination and management of various subcontractors, documentation of closure (both removal and close in place), release assessment sample collection, site remediation, waste profiling/packaging/disposal, communication with State regulators, and report preparation.

Voluntary Response Program (VRP) Site Assessment and Remediation; Environmental Scientist/Project Manager. Ms. Nakashima has served as both environmental scientist and project manager on several VRP projects on the Island of Oahu. Ms. Nakashima worked on all phases of the VRP, including project scoping, planning document preparation, field sampling, data assessment, contaminated media removal/remediation, confirmation sampling, and report preparation. Contaminants addressed included petroleum/petroleum-related compounds, heavy metals, pesticides/herbicides, PCBs, and dioxins/furans.

Industrial Wastewater Discharge Permitting (IWDP), Environmental Scientist. Ms. Nakashima acquired an IWDP which authorized the facility to discharge industrial wastewater into the City and County of Honolulu's publicly owned treatment works (POTW) under Chapter 14 of the Revised Ordinances of Honolulu.

Underground Injection Control (UIC) Permitting, Environmental Scientist. Ms. Nakashima acquired a UIC permit for two dry wells located at a car rental facility in Kona, Hawaii. Work included investigation and application procedures required by the Hawaii Department of Health-Safe Drinking Water Branch.

Hazardous Materials Inventory, Environmental Chemist. Ms. Nakashima conducted a hazardous materials survey at over sixty (60) public intermediate and high schools on the islands of Oahu, Kauai, Maui, Molokai, Lanai and Hawaii. Work included identification and categorizing of over 30,000 hazardous materials, conducting photographic documentation, and determining NFPA labeling requirements for classroom storage areas potentially containing hazardous materials.

Household Hazardous Waste (HHW) Collection, Environmental Scientist. Ms. Nakashima assisted with the collection of HHW in Honolulu, Lahaina, Wailuku, Hilo, and Kona. Tasks included identification, packaging, labeling, transportation and disposition of HHW in accordance with OSHA, EPA, and DOT protocol.

Hazardous Waste Characterization and/or Disposal, Environmental Scientist. Ms. Nakashima assisted in the disposal of various chemicals and hazardous wastes at an abandoned laboratory in Waimanalo, Oahu. Additional sites included several public intermediate and high schools. Tasks included identification, packaging, labeling, transportation and disposition of hazardous waste in accordance with OSHA, EPA, DOT, and local regulations.

Asbestos Air-Monitoring, City and County – Department of Agriculture, Environmental Scientist. Ms. Nakashima assisted and/or conducted air monitoring using low volume sampling pumps during asbestos abatement activities.

Laboratory Studies, Research Assistant. Ms. Nakashima conducted studies of protein conformational dynamics through photothermal methods and purified horse heart myoglobin within thin layered polymer slides and organic solvents. Lab experience also included utilization of Gas Chromatogrpahy (GC) -Mass Spectrometry (MS), High Performance Liquid Chromatography (HPLC), Nuclear Magnetic Resonance (NMR), Infrared (IR) spectrometry, and Ultraviolet/Visible (UV-VIS) Spectrometer.

APPENDIX

AGRICULTURAL IMPACT ASSESSMENT

E

DLNR INDUSTRIAL AND BUSINESS PARK:
IMPACTS ON AGRICULTURE

PLASH ECON PACIFIC INC.
and
MUNEKIYO HIRAGA

DLNR INDUSTRIAL AND BUSINESS PARK:
IMPACTS ON AGRICULTURE

PREPARED FOR:

State of Hawai'i,
Department of Land and
Natural Resources

PREPARED BY:
Plasch Econ Pacific Inc.
and
Munekiyo Hiraga

December 2017

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EXECUTIVE SUMMARY

1. PROPOSED DEVELOPMENT

The State of Hawai'i, Department of Land and Natural Resources (DLNR) proposes to develop the DLNR Industrial and Business Park (the Project) on an approximately 280-acre site (the Project Area) in Pulehunui, Maui, Hawai'i. The DLNR Industrial and Business Park development is envisioned to be a mixture of light-industrial/commercial and public/quasi-public uses, including the provision of required infrastructure systems. Key components of the proposed plan include the development of small, medium, and large lots for light industrial, commercial, government, and nonprofit uses to meet varying needs of future lessees. Lots within the proposed project will be leased and developed by individual tenants.

2. AGRICULTURAL CONDITIONS

The Project Area has favorable agronomic conditions for growing low-elevation crops for the Maui market and for export to O'ahu and the mainland. Soils are good, although most of the Project Area has soils that are cobbly. Slopes range from 0 percent to 7 percent; solar radiation is high (about 450 calories per square centimeter per day); irrigation water is available; road access is good; and the trucking distance to Kahului is short (about 4.9 miles to the harbor).

However, the Project Area is partially surrounded by existing and planned urban development.

3. IMPACT ON AGRICULTURAL OPERATIONS WITHIN THE PROJECT AREA

a. Farm Operations in the Project Area

The Project Area is not currently being cultivated.

b. Impacts on On-site Agricultural Operations

As previously mentioned, the Project Area is not currently being cultivated. As such, the Project will not have an adverse effect on any existing on-site agricultural operations. However, approximately 5.450 acres of the Project Area was set aside via Governor's Executive Order (EO) to the State Department of Agriculture (DOA) for a livestock quarantine and staging facility and other related purposes. The DLNR is currently working with the DOA to find an alternative location for the facility. Upon finding a new site,

the DLNR will request that the EO for the 5.450 acres be rescinded.

c. Mitigating Measures

As the Project will not have an adverse effect on any existing on-site agricultural operations, no mitigation measures are recommended. However, as discussed above an alternative site will have to be found for the livestock quarantine and staging facility.

4. IMPACT ON FARM OPERATIONS NEAR THE PROJECT SITE: NUISANCE ISSUES

Portions of the Project will abut and be downwind of fields planned by Alexander & Baldwin for mechanically harvested row crops. Nuisances arising from nearby farming operations can become an issue for businesses as well as for farm operators. Some workers and customers who are close to and downwind from farmers operations may object to occasional noise, dust, odors, chemical spraying, etc. In turn, farmers may have to change their operations in order to address these issues. However, nuisance issues for industrial users are much less of an issue than is the case for residential or commercial areas.

The Hawai'i Right-to-Farm Act gives farmers who were operating before neighboring properties were developed the right to farm even if they cause a nuisance, provided that their farm activity does not threaten public health or safety.

5. IMPACT ON THE GROWTH OF DIVERSIFIED-CROP FARMING

The Project will result in a relatively small loss of high-quality farmland of which there is a large supply, both on Maui and statewide. The supply is large due to the loss of nearly all plantations in Hawai'i. In addition, the demand for Hawai'i farmland has increased slowly over the past 30 years due to increased competition from overseas.

Even with the loss of land to other developments on Maui, ample farmland will remain available to accommodate future diversified-crop farming, food self-sufficiency, and food security.

6. OFFSETTING BENEFITS

The loss of 280 acres of agricultural land, including the area currently used by the State DOA for a livestock quarantine and staging facility, will be offset by the following benefits of the Project:

- Construction Activity
  - Construction jobs and income associated with Project development.
  - Indirect jobs and income generated by purchases of goods and services by construction companies and families of construction workers.
  - State tax revenues (excise taxes, personal income taxes, corporate income taxes, etc.) paid by construction companies and workers, and by companies and families that are supported by construction activity.
- Operations, Full Development
  - Use of some Project lots by DLNR and other government agencies.
  - Rents from lessees, which DLNR will use to support a broad range of its programs and divisions.
  - Goods and services provided by tenants of the Project.
  - Employment and income generated by onsite commercial and industrial activity.
  - Off-site employment and income activity generated by the purchases of goods and services by tenants and the families of employees
  - Tax revenues derived from County property taxes and State taxes (excise, personal income, and corporate income).

7. CONSISTENCY WITH STATE AND COUNTY POLICIES

a. Availability of Lands for Agriculture

The Hawai'i State Constitution, the Hawai'i State Plan, the State Agriculture Functional Plan, the County of Maui 2030 General Plan, the County's Maui Island Plan (MIP), and the County's Kihei-Makena Community Plan call directly or implicitly for preserving the economic viability of plantation agriculture and promoting the growth of diversified

agriculture. To accomplish this, an adequate supply of agriculturally suitable lands and water must be assured.

With regard to plantation agriculture, the Project Area is no longer part of a sugarcane plantation. Hawaiian Commercial and Sugar Company (HC&S), Maui's last plantation, ended sugar operations in December 2016.

With regard to diversified agriculture, the Project will not result in the cessation of commercial agricultural operations as the Project Area is not currently being cultivated. As previously discussed, an approximately 5.450-acre portion of the Project Area was set aside via Governor's EO to the State DOA for a livestock quarantine and staging facility and other related purposes. The DLNR is currently working with the DOA to find an alternative location for the facility. Upon finding a new site, the DLNR will request that the EO for the 5.450 acres be rescinded.

Although the Project will reduce the availability of agriculturally-zoned land by about 280 acres, the Project will not limit the growth of diversified agriculture statewide or on Maui since ample agricultural land is available due to the loss of nearly all plantations in Hawai'i.

b. Conservation of Agricultural Lands

In addition to the above, State and County policies call for conserving and protecting prime agricultural lands, including protecting farmland from urban development.

In compliance with these policies, Maui County has developed Directed Growth Boundaries (Boundaries) as part of the MIP, which was adopted by the Maui County Council in 2012. These Boundaries guide future urban and rural development on Maui while protecting prime agricultural land located outside the Boundaries. The Project Area is located within the Urban Growth Boundary (UGB) of the MIP. Specifically, the MIP states that "*the Pulehunui planned growth area envisions land uses that are compatible with surrounding agricultural operations. The planned growth area represents a logical expansion of industrial land use in the area. The area's location, midway between Kīhei and Kahului, makes it an ideal site to serve the island's long-term heavy industrial land use needs.*" Since the Project Area is located within the UGB, the site does not include the prime agricultural lands planned for conservation and protection.

It should also be noted that many of the State agricultural policies were written before the major contraction of plantation agriculture (from 1981 to

2016), and assume implicitly that profitable agricultural activities eventually will be available to utilize all available agricultural lands. This has proven to be a questionable assumption in view of the enormity of the contraction of plantation agriculture, the abundant supply of farmland that came available for diversified agriculture, and the slow growth in the amount of land being utilized for diversified agriculture.

Furthermore, discussions in the State Agriculture Functional Plan recognize that redesignation of lands from Agricultural to Urban and/or Rural should be allowed *"... upon a demonstrated change in economic or social conditions, and where the requested redesignation will provide greater benefits to the general public than its retention in ...agriculture;"* that is, when an "overriding public interest exists." The enormous contraction of plantation agriculture, which resulted in the supply of agricultural land far exceeding demand, constitutes a major change in economic conditions. Moreover, the Project will provide community benefits (jobs, tax revenues, support for DLNR programs, etc.) that far exceed the benefits of leaving the land in agriculture (about 30 jobs if the Project Area were farmed, and low tax revenues). In practice, the Project is expected to have no significant impact on agricultural activity since ample land is available on Maui and statewide to accommodate the anticipated growth of diversified agriculture.

c. **Important Agricultural Lands**

Regarding Important Agricultural Lands (IAL), the land is owned by the State, and the Project Area is within the County's UGB. State law does not allow the County to recommend State land for IAL designated, nor land planned for urban development. Similarly, the State cannot recommend State land for IAL designated if the land is planned for urban development. Thus, the Project Area cannot be a candidate for IAL designation by the County or the State.

d. **County of Maui Land-Use Plans**

As mentioned above, the Project Area is located within the UGB as designated by the MIP (see Figure 5). As shown in Figure 3, the Conceptual Land Use Plan for the Project is consistent with the intent of the UGB.

However, the Kihei-Makena Community Plan and Maui County Zoning currently designate the Project Area for agriculture use. Because the Project Area is intended for transition to urban type uses as evidenced by the

Project Site's inclusion in the UGB, the DLNR will request an amendment to the community plan and change of zoning for the Project Area to be consistent with the MIP.

DLNR Industrial and Business Park:
Impacts On Agriculture

1. Introduction

The State of Hawai'i, Department of Land and Natural Resources (DLNR) proposes to develop the DLNR Industrial and Business Park (the Project) on an approximately 280-acre site (the Project Area) in Pulehunui, Maui, Hawai'i.

This report addresses the impacts of the Project on agriculture. The material below gives information about the Project, the agricultural conditions of the Project Area, past agricultural uses of the land, the impact of the Project on existing agricultural operations in and near the Project Area, the impact of the Project on the growth of diversified-crop farming, benefits of the Project that would offset adverse agricultural impacts, and consistency of the Project with State and County agricultural policies.

2. Project Information

a. Project Location and Tax Map Key

As shown in Figure 1 (all Figures follow the body of the report), the Project Area is located approximately midway between Kahului and Kīhei, and situated on the eastern side of Maui's Central isthmus, approximately five (5) miles south of Kahului at the signalized intersection at Maui Veterans Highway and Kama'āina Road.

The Project Area is bordered on the west by Maui Veterans Highway, on the north by Kama'āina Road, on the east by Firebreak Road, and on the south by the Maui Raceway Park and the Army National Guard Armory facility.

The Tax Map Key (TMK) for the Project Area is identified as (2)3-8-008:001 (por.), as shown in Figure 2.

b. Project Description

The DLNR proposes the DLNR Industrial and Business Park development to be a mixture of light-industrial/commercial and public/quasi-public uses, including the provision of required infrastructure systems. Key components of the plan include the development of small, medium, and large lots for light industrial, commercial, government, and nonprofit uses to meet varying need of future lessees. Lots within the proposed project will be leased and developed by individual tenants.

At a conceptual level, the proposed DLNR Industrial and Business Park site plan encompasses an approximate 20-acre site for the proposed DLNR Division of Forestry and Wildlife (DOFAW) administrative facilities and baseyard in the northeastern portion of the DLNR Industrial and Business Park plan area. Small lots between 0.5 and less than 1.0 acre front Kama'āina Road and the interior roadway from Kama'āina Road. Mid-sized lots between one (1) and less than three (3) acres and larger lots between three (3) and less than five (5) acres are proposed within the interior portions of the plan area. See conceptual site plan shown in Figure 3. Although the conceptual plan proposes an interior subdivision of the lands, the plan would also allow larger or smaller lots to be consolidated in order for potential lessees to meet their specific land requirements. This conceptual layout will provide DLNR some flexibility to meet the lot size requirements specified by future lessees.

An internal roadway network, as well as bicycle, open space and drainage networks, will be developed as part of DLNR Industrial and Business Park. The project area will be accessed via the existing Kama'āina Road, an access off South Firebreak Road, a proposed access off of Maui Veterans Highway, and a southern access point via the Maui Raceway Park access road. Water, wastewater, and drainage infrastructure will also be provided to service the proposed project.

c. Land Classifications and Required Approvals

Current land classifications of the Project Area and proposed changes are as follows:

- State Land Use District
  - Current: Agricultural (see Figure 4)
  - Proposed: Urban
- County Designations
  - Maui Island Plan
    - Current: Urban Growth Boundary (see Figure 5)
    - Proposed: No change.
  - Kihei-Makena Community Plan
    - Current: Agriculture and Project District 10 (Old Puunene Airport Area) (see Figure 6)

  + Proposed: Light Industrial
- Maui County Zoning
  + Current: Agricultural
  + Proposed: M-1, Light Industrial

3. AGRICULTURAL CONDITIONS

a. Soil Types

As shown in Figure 7, the Project Area contains six (6) soil types. For each of the six (6) soil types, the complete name, the range of slopes, and soil descriptions are:

— EaA: Ewa silty clay loam, 0 to 3 percent slopes

The soils in the Ewa series are characterized by well drained soils in basins, and on alluvial fans. Soils are nearly level to moderately sloping with elevations ranging from near sea level to 150 feet. The EaA soils occurs on alluvial fans and terraces, the surface layer is dark reddish-brown silty clay loam with 0 to 3 percent slopes. Runoff is very slow and the erosion hazard is no more than slight.

— EcA: Ewa cobbly silty clay loam, 0 to 3 percent slopes

The EcA soils are characterized by 0 to 3 percent slopes, and cobbly on the surface. Runoff is very slow and the erosion hazard is no more than slight.

— EcB: Ewa cobbly silty clay loam, 3 to 7 percent slopes

The EcB soils are characterized by 3 to 7 percent slopes, and is cobbly on the surface with a few small stoney areas.

— PpA: Pulehu silt loam, 0 to 3 percent slopes

The soils in the Pulehu series are characterized by well drained soils on alluvial fans, stream terraces, and in basins. Soils are nearly level to moderately sloping with elevations ranging from nearly sea level to 300 feet. The PpA soils are characterized by 0 to 3 percent slopes with a silt loam texture.

— PrA: Pulehu cobbly silt loam, 0 to 3 percent slopes

The PrA soils are characterized by 0 to 3 percent slopes with a cobbly surface and silt loam texture.

— WID2: Waiakoa extremely stony silty clay loam, 3 to 25 percent slopes eroded

Soils in the Waiakoa series are characterized by well drained soils that are gently sloping to moderately steep. The WID2 soils are characterized by 3 to 25 percent slopes and stones cover 3 to 15 percent of the surface. In most areas about 50 percent of the surface layer has been removed by erosion. Runoff is medium and the erosion hazard is severe.

The acreages for each of the six (6) soil types are listed in Table 1 below by their quality as rated by the Natural Resources Conservation Service (NRCS), formerly known as the Soil Conservation Service.

Table 1. DLNR Industrial and Business Park: Soil Types and NRCS Ratings

Soil Types	Acres		NRCS Rating
EaA	25	9%	I
EcA	155	55%	IIs
EcB	76	27%	IIe
PpA	8	3%	I
PrA	8	3%	IIs
WID2	8	3%	VIIs
Total	280	100%	

b. Soil Characteristics

Land in the Project Area exhibits a number of favorable characteristics for farming, including moderately deep soils, gentle sloping, and well drained soils. However, most of the Project Area has cobbly soils and a portion of the site has soils with a severe erosion hazard.

c. Soil Ratings

Three (3) classification systems are commonly used to rate Hawai'i soils: (1) Land Capability Grouping, (2) Agricultural Lands of Importance to the State of Hawai'i, and (3) Overall Productivity Rating.

Land Capability Grouping (NRCS Rating)

The 1972 Land Capability Grouping by the U.S. Department of Agriculture, NRCS rates soils according to eight (8) levels, ranging from the

highest classification level "I" to the lowest "VIII".

Assuming irrigation, approximately 33 acres (12 percent) of the Project Area have soils that are rated in class I, 239 acres (85 percent) are rated in class II, and eight (8) acres (3 percent) are rated in class VII. Class I soils have few limitations that restrict their use. Class II soils have moderate limitations that reduce the choice of crops or that require moderate conservation practices. The subclassification "IIe" represents soils that are subject to moderate erosion if they are cultivated and not protected. The soils are 30 to more than 60 inches deep, and have slopes of 0 to 8 percent. The subclassification "IIs" represents soils that have moderate limitations of stoniness, unfavorable texture, shallowness, or low water holding capacity. The soils are more than 20 inches deep and have slopes of 0 to 2 percent. Class VII soils have very severe limitations that make them unsuited to cultivation and that restrict their use largely to pasture or range, woodland, or wildlife habitat. The subclassification "VIIs" represents soils that have very severe limitations because of unfavorable texture, or because they are extremely rocky or stony. Also included are land types that are steep, rocky, or stony.

Agricultural Lands of Importance to the State of Hawai'i (ALISH)

ALISH ratings were developed in 1977 by the NRCS, University of Hawai'i (UH), College of Tropical Agriculture and Human Resources, and the State of Hawai'i, Department of Agriculture. This system classifies land into three (3) broad categories: (a) "Prime" agricultural land which is land that is best suited for the production of crops because of its availability to sustain high yields with relatively little input and with the least damage to the environment; (b) "Unique" agricultural land which is non-Prime agricultural land used for the production of specific high-value crops; and (c) "Other" agricultural land which is non-Prime and non-Unique agricultural land that is important to the production of crops.

The majority of the Project Area has soils that are rated Prime, with a small portion being unclassified (see Figure 8).

Overall Productivity Rating (LSB Rating)

In 1967, the UH Land Study Bureau (LSB) developed for Maui the Overall Productivity Rating, which classifies soils according to five levels, with "A" representing the class of highest productivity and "E" the lowest.

Assuming irrigation, 191 acres of the Project Area have soils rated A, six (6) acres rated B, and 83 acres unclassified (see Figure 9).

In addition to the alphabetical productivity rating classification, the LSB also assigned a numerical system of Land Types which evaluate soil properties, topography, and climate, which in turn result in similar productive capacities. The specific Land Types of the Project Area are 71 and 72, as described below.

- Land Type 71: well-suited for machine tillability, non-stony, over 30 inches deep, moderately fine texture, and well drained.
- Land Type 72: moderately-suited for machine tillability, stony, over 30 inches deep, moderately fine texture, and well drained.

Summary Evaluation of Soil Quality

In this report, the term "high-quality farmland" is used to describe land that is rated I or II by NRCS, Prime or Unique by ALISH, or A or B by LSB. Under this definition, the majority of the project site is considered high-quality farmland.

d. **Elevation**

The elevation of the project area ranges from approximately 90 feet near the Maui Veterans Highway boundary of the project site to approximately 140 feet near Firebreak Road.

e. **Slopes**

Most of the project area has slopes that range from 0 percent to approximately 7 percent.

f. **Climatic Conditions**

Like other areas in Hawai'i, Central Maui has a mild semitropical climate that is due primarily to three factors: (1) Hawai'i's mid-Pacific location near the Tropic of Cancer, (2) the surrounding warm ocean waters that vary little in temperature between the winter and summer seasons, and (3) the prevailing northeasterly tradewinds that bring air having

temperatures which are close to those of the surrounding waters.

Solar Radiation

The Project Area receives considerable sunshine, with average daily insolation of over 450 calories per square centimeter per day (Solar Radiation of Hawai'i, 2014).

Rainfall

Average annual rainfall for the area is approximately 18 inches. Most of this rainfall occurs during the winter rainy season (October through April), while the summer months (May through September) are hot and dry (Maui County Data Book, 2015)

Temperatures

Average temperatures range from the low 60s in the winter to the high 80s in the summer.

Winds

The prevailing surface winds are tradewinds that blow from a northeasterly direction across the isthmus and out to sea. Occasional strong winds can cause crop damage if unprotected by windbreaks.

g. **Irrigation Water**

Historically, fields in the Project Area have been irrigated with surface water from East Maui and/or ground water from Central Maui. Ha'ikū Ditch runs in a north south direction east of Firebreak Road and terminates at an existing reservoir located near the Maui Raceway Park (see Figure 2). There is also an irrigation ditch that traverses the Project Area originating north of Kama'āina Road and which also terminates at the reservoir.

h. **Road Access**

The Project Area is currently accessed via Kama'āina Road and Firebreak Road off of Maui Veterans Highway.

i. **Surrounding Land Uses**

The Project Area is located on the southwest corner of the signalized intersection at Maui Veterans Highway and Kama'āina Road. The Maui Humane Society is located on the southwest corner of the intersection. Adjacent to the Project Area to the south is the Maui Army National Guard Armory and Maui Raceway Park, the 86-acre Pulehunui Industrial Park to the southeast, and former sugarcane fields to the north, northeast, and west (see Figure 2).

Beyond these roadways lie other industrial uses, and lands formerly used for sugarcane cultivation.

j. **Local Advantages and Disadvantages**

Maui Island Market

Farmers in Central Maui are well-located for supplying the Maui Island market because of the short trucking distance to Kahului, which is the island's commercial, industrial, distribution and transportation center. The drive from the Project Area to the harbor is about 4.9 miles.

While the Maui Island market is significant, it is comparatively small: in 2015, Maui County had a de facto population of about 215,439 residents and visitors.

Honolulu Market

All Maui farmers are at a disadvantage when competing against O'ahu farmers in supplying the Honolulu market due to inter-island shipping costs, delays and extra handling. In comparing barge and air-cargo services, shipping by barge is less expensive and larger loads can be shipped, but the shipments are slow and infrequent. Air service is faster and frequent, but it is far more expensive and capacities are limited.

In 2015, O'ahu had a de facto population of about 1,054,384 residents and visitors— over five times larger than the Maui market.

Mainland Market

Compared to Hawai'i, the mainland market is enormous: in 2015, the U.S. population totaled 320.9 million. In supplying this market with products that can be carried by container ship—i.e., products having long shelf-lives

such as coffee, nuts, and canned fruit—farmers on Maui are competitive with farmers on O'ahu and the other islands. Even though freight from Maui must first be barged to Honolulu then transferred onto a container ship, Matson's overseas shipping service includes inter-island barge service at no additional fee: except for some minor port charges, Matson charges a common fare for all islands.

In the case of fresh products that must be shipped by air to the mainland—i.e., products having short shelf-lives such fresh vegetables, fruits, and flowers—farmers on Maui are at a disadvantage compared to O'ahu farmers because most mainland air cargo is shipped via Honolulu International Airport. Compared to farmers on O'ahu, Maui farmers encounter additional costs, delays, and handling to cover inter-island air-cargo service and transferring the fresh produce from small inter-island aircraft to large overseas aircraft.

However, overseas air-cargo service from Maui has improved somewhat because the current generation of aircraft can depart from the short runway at Kahului with a full load of passengers and a full load of cargo in the hold. This direct service allows farmers on Maui to be more competitive in mainland markets. However, the lift capacity from Maui is limited by the number of direct flights.

In the U.S. mainland market, Hawai'i farmers must also compete against farmers on the mainland and in Mexico, Central and South America, Southeast Asia, etc. Most of the competing farm areas have lower production and delivery costs than Hawai'i does. Competing against Mexico is particularly difficult given the North America Free Trade Agreement (NAFTA) and Mexico's proximity to major U.S. markets.

Summary of Locational Advantages

In terms of location, farmers in Central Maui are well-situated to supply the small Maui Island market. And compared to other farmers in Hawai'i, they can also compete reasonably well in supplying mainland markets, as long as their products have long shelf-lives and so can be shipped by surface vessel.

However, compared to farmers on O'ahu, they are at a disadvantage in supplying the Honolulu market. Furthermore, they are at a disadvantage in supplying mainland markets if their products have short shelf-lives and so must be shipped by air. Also, farmers on Maui are at a disadvantage in

competing against the low-cost producers who supply mainland markets.

k. **Potential Crops and Employment**

Based on the above agronomic conditions, the Project Area is suitable for low-elevation crops that are grown commercially in Hawai'i, including but not limited to: asparagus, beans (green, bush and snap), bell peppers, bittermelon, cantaloupe, Chinese peas, cucumbers, daikon, dry onions, eggplant, flowers/nursery products, ginger root, green onions, green peppers, head and semi-head lettuces, herbs, honeydew melons, limes, lotus root, lychee, Manoa lettuce, mango, mustard cabbage, Oriental squash, parsley, pineapple, pumpkins, seed crops, sugarcane, sweet corn, sweet potatoes, tangerines, and watermelons.

If the land were used to grow vegetable and melon crops, it would support about 30 jobs (about one (1) job per ten (10) acres).

l. **Summary of Agricultural Conditions**

The Project Area has agronomic conditions that are suitable for growing low-elevation crops for the Maui market and for export to O'ahu and the mainland. Soils are relatively good, although most of the area has soils that are cobbly; solar radiation is high; irrigation water is available; and road access is good; and the trucking distance to Kahului is short.

However, the Project site is partially surrounded by existing and planned urban development as shown in Figure 2.

4. PAST AGRICULTURAL AND OTHER USES

The sugar industry in Hawai'i developed in the mid-1800s, resulted in large tracts of lands, including those in the vicinity of the Project, being leased or purchased for what had become an intensely profitable endeavor.

A portion of the cane fields adjacent to the project area was turned into a civil airfield for the Territory of Hawai'i in 1937. As World War II loomed on the horizon, the Navy began using the airport, along with a small Army Air Corps support base at the airfield. Later, the airport was expanded and commissioned as a Naval Air Station. The airfield was released by the Navy back to the Territory of Hawai'i in 1947 and was used as the official inter-island Airport until the 1950s when the Kahului Airport was available for civil use. However, the Pu'unēnē airstrip still serviced crop-dusters and other smaller aircrafts until eventually being abandoned as a landing strip until sometime

between 1961 and 1977.

The Project Area itself was used for growing sugarcane from the late 1940s to 2016. The Hawaiian Commercial and Sugar Company (HC&S) previously leased lands in the vicinity, including the Project Area, for sugar cultivation from the DLNR via the month-to-month Revocable Permit S-7368. Since HC&S ceased sugar operations on Maui in December 2016, the Revocable Permit has been terminated, and the lands have been returned to the DLNR.

5. IMPACT ON AGRICULTURAL OPERATIONS IN THE PROJECT AREA

Impacts on On-site Agricultural Operations

The Project Area is not currently being cultivated. As such, the Project will not have an adverse effect on any existing on-site agricultural operations. However, approximately 5.450 acres of the Project Area was set aside via Governor's Executive Order (EO) to the State Department of Agriculture (DOA) for a livestock quarantine and staging facility and other related purposes. The DLNR is currently working with the DOA to find an alternative location for the facility. Upon finding a new site, the DLNR will request that the EO for the 5.450 acres be rescinded.

Mitigating Measures

As the Project will not have an adverse effect on any existing on-site agricultural operations, no mitigation measures are recommended. However, as discussed above an alternative site will have to be found for the livestock quarantine and staging facility.

6. IMPACT ON FARM OPERATIONS NEAR THE PROJECT SITE

Nuisance Issues

Portions of the Project will abut and be downwind of fields planned by Alexander & Baldwin for mechanically harvested row crops (see Figure 10). However, the specific crop for these abutting fields have yet to be determined.

Nuisances arising from nearby farming operations can become an issue for businesses as well as for farm operators. Some workers and customers who are close to and downwind from farmers operations may object to occasional noise, dust, odors, chemical spraying, etc. In turn, farmers may have to change their operations in order to address these issues. However, nuisance issues for industrial users are much less of an issue than is

the case for residential or commercial areas.

Mitigating Measures

The Hawai'i Right-to-Farm Act gives farmers who were operating before neighboring properties were developed the right to farm even if they cause a nuisance, provided that their farm activity does not threaten public health or safety.

7. IMPACT ON THE GROWTH OF DIVERSIFIED-CROP FARMING

The Project will result in a loss of good farmland to development. As discussed below, this loss, in combination with the loss of farmland due to other projects (i.e., the cumulative impact), is too small to affect the growth of diversified-crop farming on Maui or statewide.

a. **Loss of Farmland**

DLNR Industrial and Business Park

The Project will commit about 280 acres of good farmland now in the State Agricultural District to a non-agricultural use, or about 0.4 percent of the 72,100 acres of the high-quality farmland on Maui (see Subsection d.). The Project's comparatively small share of the good farmland on Maui is visually apparent in Figure 11.

All Maui Projects

Figure 11 shows the projects (bordered in red), including residential-oriented agricultural subdivisions, that are compatible with the MIP and which will result in the loss of high-quality farmland in the State Agricultural District. In total, these projects will result in the loss of about 3,900 acres of high-quality farmland, or about 5.4 percent of the 72,100-acre island-wide supply of such land. In practice, the loss of good agricultural land will be less than 3,900 acres since not all proposed projects will be approved and built. Also, the loss of farmland will be gradual, depending on the demand for new homes.

b. **Supply of Farmland**

Island of Maui

The supply of high-quality farmland is shown in Figure 11 based on

agricultural land that has one or more high soil ratings: an NRCS rating of I or II; an ALISH rating of Prime or Unique, and/or an LSB rating of A or B. Based on this definition, Maui Island has about 72,100 acres of high-quality farmland in the Agricultural District. This accounting and Figure 11 exclude high-quality farmland that is used for country estates and golf courses. In order to farm much of the land that is now fallow, major water improvements would be required including rebuilding portions of water delivery systems, repairing stream diversions, and possibly developing new groundwater wells.

Since 1990, the contraction and eventual closure of three plantations—Pioneer Mill (sugarcane), Maui Pineapple Co., and HC&S—released over 55,000 acres of good farmland in Central and West Maui. While some of this former plantation land was planted in other crops (e.g., coffee and seed corn), and some of it was developed for homes, most of it remains available for farming.

For the entire County (Maui, Moloka'i and Lāna'i), about 7,000 acres are in crop, most of which are on Maui island. This includes (1) about 1,700 acres to grow food crops for the Hawai'i market (vegetables, melons, pineapple, and other fruits); and (2) about 5,300 acres for other crops (e.g., seed crops, coffee, flowers and nursery products, etc.).

Thus, over 65,000 acres of high-quality land are available for farming on Maui island (about 72,100 acres of high-quality farmland on Maui island, less about 7,000 acres farmed in the entire County). Much of the available land is fallow or is used for grazing cattle. Assuming that all projects shown in the 2012 MIP are eventually approved and built, then more than 61,000 acres of high-quality farmland on Maui would remain for farming (at least 65,000 acres of available high-quality farmland, less 3,900 acres that eventually would be developed).

Subject to demand, the land that is the most realistic to use for new farms on Maui is that which was recently used for plantation agriculture, although irrigation systems may require repairs in some areas.

Statewide

Statewide, the remaining supply of available farmland released by plantation agriculture exceeds 200,000 acres. This is about 3.7 times the amount of land in crop—about 54,000 acres. About 15,000 acres of the 54,000 acres are used for food crops grown primarily for the Hawai'i market, while

about 39,000 acres are used primarily for export crops (pineapple, macadamia nuts, coffee, seeds, flowers, etc.).

The supply of available farmland is vast because of the statewide contraction and closure of many sugarcane and pineapple plantations during the past four (4) decades, combined with the subsequent slow growth of diversified-crop farming (i.e., all crops other than sugarcane and pineapple)—see Figure 12. In the late 1980s, Hawai'i had 19 plantations: 14 sugarcane and five (5) pineapple. Now, just two (2) small plantations remain: Maui Gold Pineapple Co. in upcountry Maui, and Dole's pineapple plantation on O'ahu.

c. **Trends in Diversified-Crop Acreage**

Figure 12 shows the growth of diversified-crop acreage. Even though Hawai'i has a long history of strong support for its agriculture industry, little growth in diversified-crop acreage has occurred since 1983, with the single exception being seed crops which increased at an average rate of about 290 acres per year from 1990 to 2011. However, seed acreage has declined in recent years, and the seed-crop industry faces public opposition over their development of genetically modified organisms (GMO) crops.

The lack of significant growth of diversified crops reflects increased competition from overseas resulting from technology and other advances that have improved the delivery of fresh produce (faster, less spoilage, better coordination of supply to demand), along with the 1994 NAFTA and other trade agreements that increased food exports to the U.S. from low-cost producers in Mexico, Central America, South America, and elsewhere.

Following the plantation closures on O'ahu, vegetable and melon acreage expanded on the capital island, but this was followed by declines on the Neighbor Islands for the farmers who exported to O'ahu.

d. **Factors Limiting the Growth of Diversified-Crop Farming**

A great many crops can be grown in Hawai'i's year-round subtropical climate, and a number of them can be grown profitably in volumes requiring a few hundred acres. However, the modest growth in land requirements for diversified crops reflects the fact that few crops can be grown profitably on a large scale.

The primary factors that have limited the growth of diversified agriculture in Hawai'i are listed below:

— Hawai'i's subtropical climate is not well-suited to the commercial

production of major crops that grow better in the temperate mainland climates.

- For certain crops, special hybrids adapted to Hawai'i's subtropical climate are yet to be developed.
- For some crops, local varieties are not perfect substitutes for imports (e.g., premium-priced sweet Maui onions vs. inexpensive storage onions).
- Crop pests are more prevalent and more expensive to control in Hawai'i than they are on the mainland where the cold winters kill many pests.
- Fruit-fly infestations prevent exportation of many crops, or require expensive treatment.
- Most soils in Hawai'i have low nutrient levels and therefore require high expenditures for fertilizer.
- Hawai'i suffers from high farm-labor costs, largely because the agriculture industry must compete against the visitor industry and related industries for labor.
- Compared to many other farm areas that supply U.S. markets, the cost of shipping agricultural supplies and equipment to Hawai'i is high, as is the cost of exporting produce from Hawai'i to mainland markets. High shipping costs are due to Hawai'i's remote location and to Federal law (the Jones Act) that require use of American-built ships and U.S. crews between U.S. ports .
- For a number of crops, consumption volumes in Hawai'i are too small to support large, efficient farms (i.e., the volumes are too small to realize economies of scale).
- Trends toward crops that are certified as safe and toward a single supplier of many food items favor large farms.
- Hawai'i farmers must compete against highly efficient mainland and foreign farms which, in a number of cases, can deliver produce to Hawai'i more cheaply than can local producers. This is due to economies of scale and, in comparison to Hawai'i, low costs for land, water, labor, equipment, supplies, fertilizer, pest control, etc.
- Some crops cannot be produced profitably in the summer due to competition from low-cost fruit and vegetable imports from California, other states, and Mexico.

e. **Agricultural Outlook by Type of Crop**

Food Crops, Field Farming

The publication "Statistics of Hawai'i Agriculture" indicates that Hawai'i is about 33 percent self-sufficient in fresh produce (i.e., vegetables, melons and fruits) while using about 15,000 acres of land. Given competition from low-cost imports, a realistic level of self-sufficiency may be about 50 percent. This level of self-sufficiency would require a statewide total of about 22,500 acres (15,000 acres × 3 × 50 percent), or an additional 7,500 acres (22,500 acres for 50 percent self-sufficiency less the 15,000 acres currently farmed). With intensive farming (such as hydroponic farming), additional land requirements would be even less.

In 2010, Maui County had about 13.6 percent of the State's population of residents and visitors (Maui County Data Book, 2015). Thus, Maui County would require about 3,100 acres for 50 percent self-sufficiency in fresh produce (13.6 percent of 22,500 acres), or about 1,400 additional acres (about 3,100 acres, less about 1,700 acres currently used for food crops).

Food Crops, Hydroponic Farming

In advanced economies—such as Europe and the U.S.—a strong and well-established trend has developed to grow vegetables and melons hydroponically in greenhouses. Many of the tomatoes, cucumbers, peppers, and lettuces sold in our supermarkets are grown hydroponically in greenhouses by Hawaii and mainland farmers. For the U.S. as a whole, most of the tomatoes sold in supermarkets are now grown hydroponically.

Although the capital cost of constructing hydroponic farms is high, hydroponic farming in greenhouses provides many advantages over traditional field farming, including but not limited to the following:

- Higher-quality produce.
- Year-round production, including high yields during the winter months.
- Secure production unaffected by droughts and storms.
- Far higher yields due to controlled conditions (computer control of temperature, humidity, CO_2 level, water and nutrient applications, and air pressure to keep pests out of the greenhouse).
- Much less land required because of the higher yields (as low as 2 percent of field farming).

- No need to use good farmland because the farms can be placed on low-quality farmland, industrial land, or even on rooftops of large buildings.
- Much less water (as low as 5 percent of field farming).
- No pesticide or herbicide spraying because of the controlled environment.
- Less labor and less difficulty in attracting workers because of better working conditions.
- Less crop and equipment theft because operations are inside buildings.
- Lower energy requirements.
- Lower transportation costs if the farm is located near major markets.

Commercial hydroponic farms in Hawai'i and crops grown include, but are not limited to:

- Green Growers (Hau'ula, O'ahu) is a 2.5-acre outdoor hydroponic farm supplying tomatoes.
- Grand Hyatt Kaua'i operates a hydroponic farm on a former tennis court, supplying seven types of lettuces to its restaurants.
- Kamuela (Big Island) supplies tomatoes.
- Kaua'i Fresh Farms (Kīlauea, Kaua'i) supplies tomatoes and lettuces.
- May's Wonder Gardens (Hale'iwa, O'ahu), an outdoor hydroponic farm, supplies lettuces.
- Olowalu Nui Farms (Olowalu, Maui) supplies tomatoes, leafy lettuce, cucumbers, peppers and herbs.
- Waipoli Hydroponic Greens (Kula, Maui) is an outdoor hydroponic farm supplying lettuces and watercress.

In addition to the above farms, many of the vegetables sold in Hawai'i come from large mainland hydroponic farms. For example, Houweling's Tomatoes of Oxnard, California supplies many of the tomatoes and cucumbers sold in Hawai'i markets, including Costco, Foodland, Times and Safeway. Their 125-acre farm has six (6) greenhouses having a combined area of about 30 Costco Warehouse stores. In Santa Maria, California, Windset Farms recently built a similar 128-acre farm. And Eurofresh recently built America's largest hydroponic farm on 318 acres in Wilcox, Arizona.

If Hawai'i vegetable farmers are to remain competitive with mainland hydroponic farmers, they will be compelled to turn increasingly to hydroponic farming in greenhouses.

Feed Crops

If feed crops could be grown in Hawai'i and priced competitively against mainland imports, they could replace some of the grains and hay that are now being imported to the state. However, a number of commercial attempts in Hawai'i to grow grains and alfalfa have not been successful. The major problems have been (1) pests, particularly birds that eat the grains before they are harvested; (2) humidity that is too high for some feed crops (e.g. problems with mold, smut fungus, insufficient drying of alfalfa, etc.); (3) high winds that cause stalks to lean over and break (lodge); and (4) high production costs compared to mainland farms.

Nevertheless, Big Island Dairy is growing corn on about 800 acres to feed its cows. Also on the Big Island, Clover Leaf Dairy (the only other dairy in the Islands) attempted to grow corn, but winds caused the stalks to lean, rendering them nearly impossible to harvest. They also attempted forage sorghum, but it turned moldy and smutty because of the high humidity.

Also, some biofuel crops supply feed as a byproduct.

Biofuel Crops

Over the past 20+ years, a number of companies have explored biofuel crops to take advantage of the vast acreage released from sugar and pineapple, and a number of biofuel plantations have been proposed and continue to be proposed.

On the north shore of O'ahu, TerViva has planted about 200 acres in Pongamia trees, and is planting about 250 acres on Maui on land leased from HC&S. If successful the Maui acreage will be increased to over 2,100 acres.

At full maturity, the seeds from an acre of Pongamia trees yields about 400 gallons of oil which can be refined into high-grade diesel fuel or jet fuel, and about three (3) tons of seed cake which can be used to feed dairy cattle or poultry. Also, the husk can be burned to generate electricity. Revenues are estimated at over $2,150 per acre with a net of exceeding $900 per acre. The trees grow rapidly, last for decades, require less water than other biofuel crops, are hardy, and thrive in various agronomic conditions.

On O'ahu, HPOWER burns green waste from homes and farms to generate electricity.

Also, Hawaiian Electric Co. and the U.S. Army have partnered to develop a 50 megawatt (mW) power plant at Schofield Barracks. Costing about $167 million, this plant is under construction and scheduled for completion in 2018. It will burn a mixture of biomass and conventional fuels.

On the Big Island, Hū Honua has approval to harvest and burn eucalyptus trees to generate electricity from a 21.5 mW power plant costing about $250 million. Nearly 34,000 acres of muture forest trees are available.

Also on the Big Island, 'Āina Koa Pono LLC has planned to develop a 12,000-acre plantation in Ka'ū that would cost $450 million for the processing facility, and would produce about 24 million gallons of biofuel, including about 16 million gallons that would be sold to Hawaiian Electric Light Company at a rate subsidized by customers on O'ahu and Maui. The biorefinery will initially process existing invasive plants, eucalyptus trees, and local green waste. Over the long term, the company is working with other organizations to select an appropriate crop. Two advantages of locating a biofuel plantation in Ka'ū are (1) low land costs compared to other farm areas in Hawai'i, and (2) high rainfall which reduces or eliminates the need for irrigation. This project has not been approved by the Public Utilizes Commission.

On Kaua'i, Hawai'i BioEnergy has planned a 14,000-acre biofuel plantation that will convert eucalyptus and/or other feedstock into about ten (10) million gallons of fuel to burn at the Kahe Generating Station on O'ahu. The plantation will be located on the windward side of the island which benefits from high rainfall.

Rather than growing a biofuel crop on farmland, another alternative would be to produce biofuel from algae. One of the advantages of algae is its high yield of vegetable oil (about 5,000 gallons to 15,000 gallons per acre per year), and the corresponding high returns per acre. Also, good farmland is not required for algae since it is grown in ponds. The water source can include wastewater, brackish water, or even seawater. High yields are achieved in areas having (1) high solar radiation, (2) access to a source of nutrients (such as a wastewater treatment plant), and (3) access to carbon dioxide to stimulate growth.

Export Crops

The potential export market for crops is far larger than the Hawai'i market. In 2015, the U.S. population was 320.9 million, compared to Hawai'i's resident-plus-visitor population of 1.58 million. To take advantage of this large potential, Hawai'i farmers continue to explore various export crops on lands released from plantation agriculture. Over the next 20+ years, one or more of these crops may prove to be successful and may grow into a major export crop.

The history of agricultural efforts in Hawai'i reveals that the successful development of major new export crops requiring extensive acreage is possible, but difficult and infrequent. For example, over the past 50+ years, Hawai'i farmers have explored numerous possibilities for additional export crops, but they have developed overseas markets for just one such diversified crop that requires more than 10,000 acres (macadamia nuts at 18,000 acres); one that require more than 5,000 acres (coffee at 6,900 acres); and only four crops or crop categories that require more than 1,000 acres each (seed crops at 4,010 acres, flowers/nursery products at 2,281 acres, papaya at 1,500 acres, and tropical specialty fruits at 1,480 acres. Tropical specialty fruits include longan, lychee, mango, star fruit (carambola), rambutan, etc. For the above export crops, some of the acreage is used to supply the Hawai'i market. Furthermore, acreages of these export crops have not grown significantly since the mid-1980s, with the single exception-being seed crops.

Measured by acreage, the greatest successes with developing new export crops occurred with macadamia nut orchards on the Big Island in the late 1970s and early 1980s, coffee on Kaua'i in the late 1980s, and seed crops since the early 1990s. The success with macadamia nuts was driven largely by C. Brewer's market development efforts, combined with Federal tax-shelter advantages which ended in 1986. In 1987, A&B planted about 4,850 acres in coffee on Kaua'i, which was subsequently reduced to about 3,100 acres due to Hurricane 'Iniki in 1992. As mentioned earlier, the only major export crop that has exhibit sustained growth in recent decades has been seed corn and other seed crops: acreage grew at a rate of about 290 acres per year since 1990, but has declined since 2011. Unlike other crops, the success of seed crops in Hawai'i has not been driven by profitable farm operations in Hawai'i, but rather by the research needs of very large multi-national companies that develop seeds in Hawai'i to sell to farmers throughout the world.

Cattle Grazing

Cattle ranches use most of the agricultural land in Hawai'i that is not farmed—over one (1) million acres. Although returns per acre are low, cattle ranching provides food, lowers the risk of fire, and reduces property taxes for land dedicated to agriculture. In some cases, cattle ranching is an interim use of good farmland until a profitable crop can be developed.

Intensive Livestock Operations

Intensive livestock operations include dairies, poultry farms, hog farms, etc. Except for dairies that rely on pastures to feed their cattle, most intensive livestock operations require relatively little land, and generally do not require high-quality farmland.

Over the past few decades, Hawai'i has lost most of its intensive livestock operations due to competition from the mainland. For example, only two dairies remain, both of which are on the Big Island.

However, Ulupono Initiative is funding Hawai'i Dairy Farms, a 557-acre dairy planned for Kaua'i. Based on practices used in New Zealand, this dairy will be the first in Hawai'i to use rotational pasture grazing to feed its cows.

f. **A&B Agricultural Plans**

A&B has developed an agricultural plan for its former sugarcane lands in central Maui. The plan will continue to evolve over time, depending on which agricultural activities are pursued by A&B and various lessees, and which prove to be commercially successful. As shown in Figure 10, recent versions of this plan had the following agricultural activities.

Crops

- Agricultural parks
- Beverage crops (coffee, cacao)
- Biogass feedstock crop
- Large diversified farm leases
- Forestry Crops
- Mechanically harvested row crops, East Maui
- Orchard crops
- Pongamia orchard

Livestock Operations

- Dairy
- Livestock, irrigated pastures
- Livestock, non-irrigated pastures

Successful implementation of the A&B agricultural plan will result in a significant expansion of diversified agriculture, and will change agricultural trends similar to the accelerated growth which occurred in the early 1980s (see Figure 12). Some non-commercial crops will have to be developed to large-scale commercial activities. New markets will have to be developed to absorb the additional production. Exports will have to be increased inasmuch as the Hawai'i market is too small to productivity use all of the A&B land. New types of energy crops will have to be commercialized. Modern dairy practices will have to be introduced in order to be competitive with milk imports.

Given the history of agriculture in Hawai'i, implementation of the A&B agricultural plan is likely to occur over a period in excess of ten (10) years. Also, agricultural uses are likely to change over time. For example, land which cannot be profitably farmed or used for diary activities in the short term is likely be used for cattle ranching. But as profitable crops are identified and their markets develop, land is likely to be transferred from grazing to more profitable farming.

Major portions of other plantations have successfully transitioned to diversified agriculture. Notable successes include, but are not limited to:

- Coffee on Kaua'i by A&B.
- Macadamia nuts on the Big Island by C. Brewer.
- Seed corn on former plantation lands on Kaua'i, O'ahu, Moloka'i, and Maui.
- Vegetable and melon crops on former O'ahu plantations.
- Commercial forests on former Big Island plantations.
- Cattle operations on former plantations throughout Hawai'i.

The likely success of diversified agriculture on A&B lands is indicated by:

- The abundant supply of farmland that is being made available.
- Favorable agronomic conditions for much of this land (i.e., high-quality soils, high solar radiation, etc.).

- Sufficient water delivered at low costs (assuming that State water leases are renewed).
- Favorable lease terms (e.g., lower rents and longer lease periods than are generally found with agricultural leases on O'ahu).
- A&B's commitment to agriculture as indicated by its 2009 voluntary designation of 27,000 acres as "Important Agricultural Lands," ensuring that Maui's central isthmus is set aside and preserved for agricultural use.
- A&B's past success with diversified agriculture (e.g., its development of a large coffee farm on Kaua'i).

In summary, a very large supply of high-quality farmland is being made available for diversified agriculture on Maui, along with a strong commitment to agriculture by A&B.

g. Cumulative Impact on the Growth of Diversified-Crop Farming

The Project and other developments on Maui will result in the loss of about 3,900 acres of good farmland. However, ample farmland will remain available to accommodate future diversified-crop farming, food self-sufficiency, and food security.

As mentioned above, over 65,000 acres of high-quality land are available for farming on Maui Island, and over 200,000 acres Statewide. The supply is large due to the loss of nearly all plantations in Hawai'i. In particularly, the recent closure of HC&S's sugar operations has greatly increased the supply of high-quality farmland on Maui.

In contrast to the large supply, the demand for Hawai'i farmland has grown slowly in recent years due largely to increased competition from overseas. Although A&B's implementation of their agricultural plan will accelerate the growth of diversified agriculture, the supply of farmland far exceeds anticipated demand both on Maui and statewide.

h. Mitigating Measures

In view of the negligible impact of the Project on the growth of diversified agriculture, mitigation measures for the loss of agricultural land are not recommended.

8. OFFSETTING BENEFITS

The loss of 280 acres of agricultural land, including the area currently used by the State DOA's for a livestock quarantine and staging facility, will be offset by the following benefits of the Project:

- Construction Activity
  - Construction jobs and income associated with Project development.
  - Indirect jobs and income generated by purchases of goods and services by construction companies and families of construction workers.
  - State tax revenues (excise taxes, personal income taxes, corporate income taxes, etc.) paid by construction companies and workers, and by companies and families that are supported by construction activity.
- Operations, Full Development
  - Use of some Project lots by DLNR and other government agencies.
  - Rents from lessees, which DLNR will use to support a broad range of its programs and divisions.
  - Goods and services provided by tenants of the Project.
  - Employment and income generated by onsite commercial and industrial activity.
  - Off-site employment and income activity generated by the purchases of goods and services by tenants and the families of employees
  - Tax revenues derived from County property taxes and State taxes (excise, personal income, and corporate income).

9. CONSISTENCY WITH STATE AND COUNTY POLICIES

a. Availability of Lands for Agriculture

The Hawai'i State Constitution, the Hawai'i State Plan, the State Agriculture Functional Plan, the County of Maui 2030 General Plan, the County's Maui Island Plan (MIP), and the County's Kihei-Makena Community Plan call directly or implicitly for preserving the economic viability of plantation agriculture and promoting the growth of diversified

agriculture. To accomplish this, an adequate supply of agriculturally suitable lands and water must be assured.

With regard to plantation agriculture, the Project Area is no longer part of a sugarcane plantation. HC&S, Maui's last plantation, ended sugar operations in December 2016.

With regard to diversified agriculture, the Project will not result in the cessation of commercial agricultural operations as the Project Area is not currently being cultivated. As previously discussed, an approximately 5.450-acre portion of the Project Area was set aside via Governor's EO to the State DOA for a livestock quarantine and staging facility and other related purposes. The DLNR is currently working with the DOA to find an alternative location for the facility. Upon finding a new site, the DLNR will request that the EO for the 5.450 acres be rescinded.

Although the Project will reduce the availability of agriculturally-zoned land on Maui by about 280 acres, the Project Area is intended to be transitioned into urban uses as it was included within the limits of the MIP Urban Growth Boundary (UGB).

In addition, the Project will not limit the growth of diversified agriculture statewide or on Maui since ample agricultural land is available (see Section 7). This is due to the enormous supply of agricultural land that is now available as a result of the loss of nearly all plantations in Hawai'i (see Figure 11).

b. **Conservation of Agricultural Lands**

In addition to the above, State and County policies call for conserving and protecting prime agricultural lands, including protecting farmland from urban development.

In compliance with these policies, Maui County has developed Directed Growth Boundaries (Boundaries) as part of the MIP, which was adopted by the Maui County Council in 2012. These Boundaries guide future urban and rural development on Maui while protecting prime agricultural land located outside the Boundaries. The Project Area is located within the UGB of the MIP. Specifically, the MIP states that "*the Pulehunui planned growth area envisions land uses that are compatible with surrounding agricultural operations. The planned growth area represents a logical expansion of industrial land use in the area. The area's location, midway*

between Kihei and Kahului, makes it an ideal site to serve the island's long-term heavy industrial land use needs." Since the Project site is located within the UGB, the site does not include the prime agricultural lands planned for conservation and protection.

It should also be noted that many of the State agricultural policies were written before the major contraction of plantation agriculture (from 1981 to 1996), and assume implicitly that profitable agricultural activities eventually will be available to utilize all available agricultural lands. This has proven to be a questionable assumption in view of the enormity of the contraction of plantation agriculture, the abundant supply of farmland that came available for diversified agriculture, and the slow growth in the amount of land being utilized for diversified agriculture (see Section 7 and Figure 11).

Furthermore, discussions in the State Agriculture Functional Plan recognize that redesignation of lands from Agricultural to Urban and/or Rural should be allowed "*... upon a demonstrated change in economic or social conditions, and where the requested redesignation will provide greater benefits to the general public than its retention in ...agriculture;*" that is, when an "overriding public interest exists." The enormous contraction of plantation agriculture, which resulted in the supply of agricultural land far exceeding demand, constitutes a major change in economic conditions (see Section 7). Moreover, the Project will provide community benefits (jobs, tax revenues, etc.) that far exceed the benefits of leaving the land in agriculture (about 30 jobs if the Project Area were farmed, and low tax revenues) see Subsection 3.k and Section 8. In practice, the Project is expected to have no significant impact on agricultural activity since ample land is available on Maui and statewide to accommodate the relocation of the existing limited on-site agricultural activities and the anticipated growth of diversified agriculture (see Section 7).

c. **Important Agricultural Lands (IAL)**

In 1978, the State Constitutional Convention proposed the identification and designation of IAL. After nearly 30 years, the State Legislature adopted legislation to fulfill the intent and purpose of the Constitutional mandate. As stated in HRS Chapter 205: "The objective for the identification of important agricultural lands is to identify and plan for the maintenance of a strategic agricultural land resource base that can support a diversity of agricultural activities and opportunities that expand

agricultural income and job opportunities and increase agricultural self-sufficiency for current and future generations." IALs are defined as lands that: "(1) Are capable of producing sustained high agricultural yields when treated and managed according to accepted farming methods and technology; (2) Contribute to the State's economic base and produce agricultural commodities for export or local consumption; or (3) Are needed to promote the expansion of agricultural activities and income for the future, even if currently not in production."

The IAL designation is a supplemental State land use classification administered by the State Land Use Commission (LUC). This designation provides access to incentives that promote profitable farming of IALs. Incentives include the approval to construct on-site farm dwellings and employee housing, income tax credits for agricultural costs, financing opportunities, loan guarantees, and expedited State-level permitting for agricultural processing facilities. The designation does not change existing land classifications (i.e., State Land Use Districts, County community plan designations, County zoning, etc.), nor does it restrict allowable uses of IAL-designated agricultural land.

Landowners can petition the LUC to designate as IAL all or portions of their agricultural land. In addition, each county is required to identify, map and recommend lands within its jurisdiction that have potential for IAL designation in keeping with the standards, criteria and procedures established by law. After the LUC reviews a County's recommendations, the LUC is responsible for designating IALs.

As discussed previously, regarding IAL, the land is owned by the State, and the Project Area is within the County's UGB. State law does not allow the County to recommend State land for IAL designated, nor land planned for urban development. Similarly, the State cannot recommended State land for IAL designated if the land is planned for urban development. Thus, the Project Area cannot be a candidate for IAL designation by the County or the State.

It is noted that although the Project Area is not designated as IAL, A&B petitioned the LUC in 2009 to have portions of their lands in the immediate vicinity of the Project Area designated as IAL. As such, approximately 325 acres to the north and the east of the Project Area are designated as IAL. See Figure 12.

As shown in Figure 13, lands to the north, east, and west of the Project Area and designated IAL.

d. **County of Maui Land-Use Plans**

As mentioned above, the MIP shows the Project Area to be within the UGB as designated by the MIP (see Figure 5). As shown in Figure 3, the Conceptual Land Use Plan for the Project is consistent with the intent of the UGB.

However, it is noted that the Kihei-Makena Community Plan and Maui County Zoning currently designate the Project Area for agriculture use. However, because the Project Area is intended for transition to urban type uses as evidenced by the Project Site's inclusion in the UGB, the DLNR will request an amendment to the community plan and change of zoning for the Project Area to be consistent with the MIP.

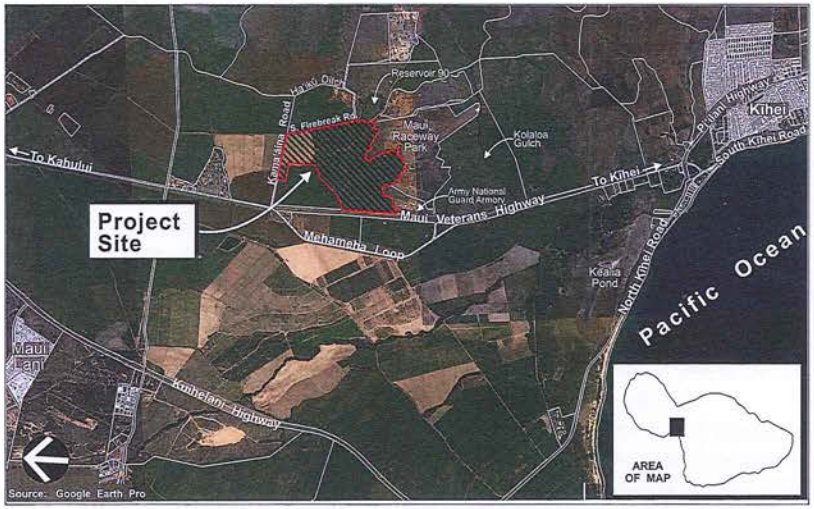

Figure 1. Regional Location Map

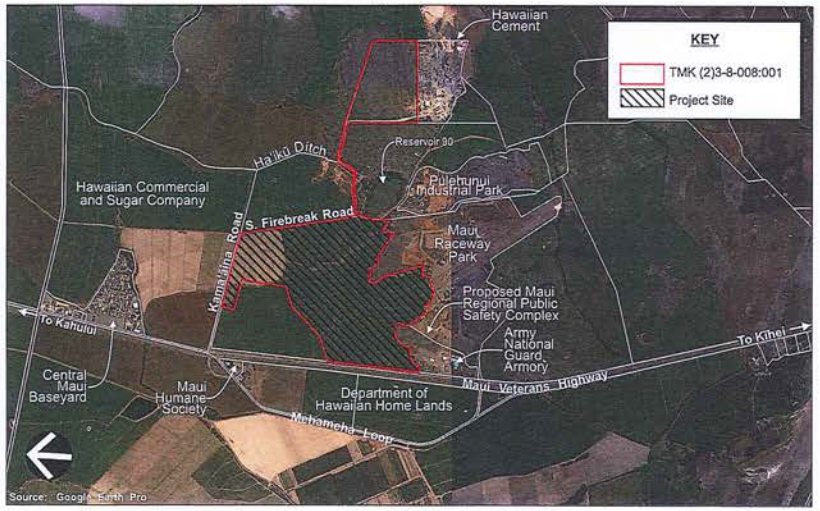

Figure 2. Property Location Map

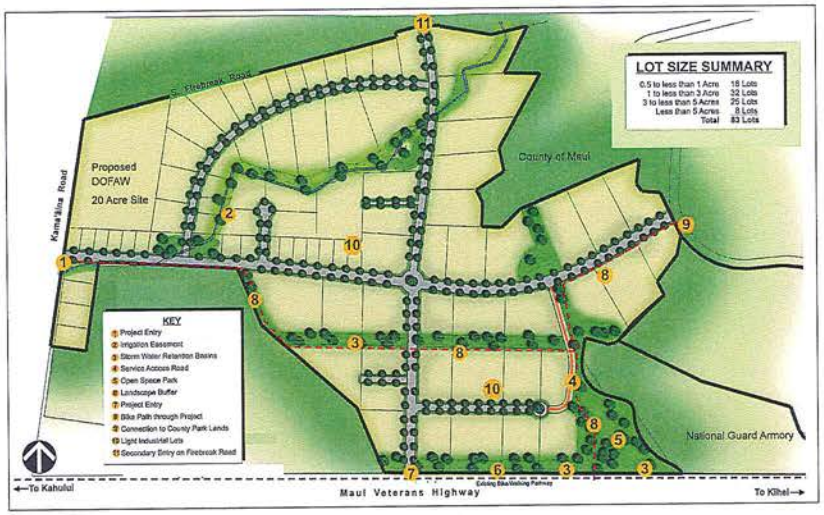

Figure 3. Conceptual Site Plan

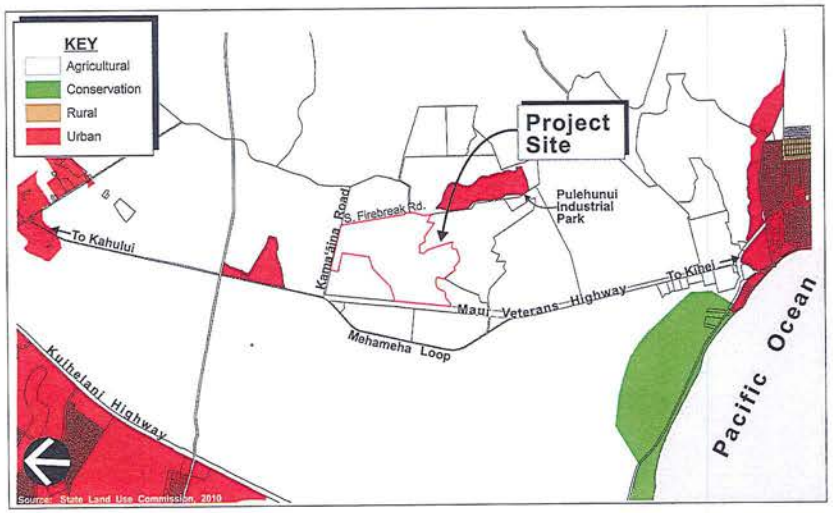

Figure 4. State Land Use Designation Map

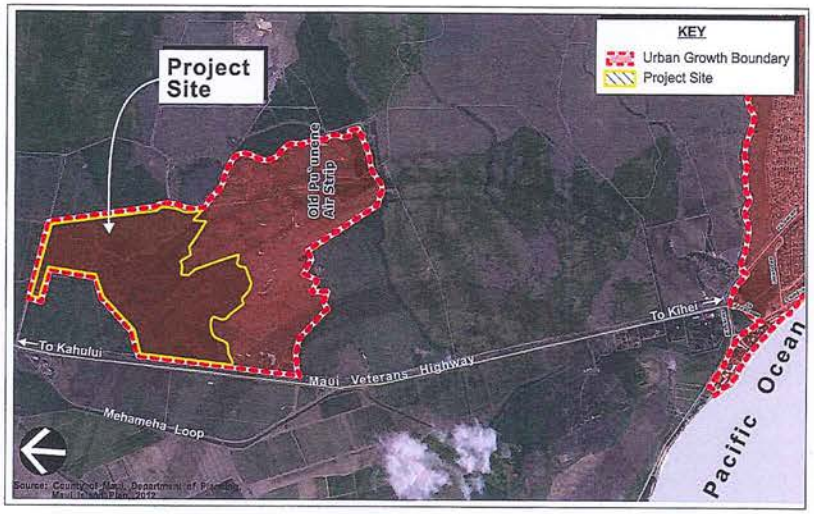

Figure 5. Maui Island Plan Map

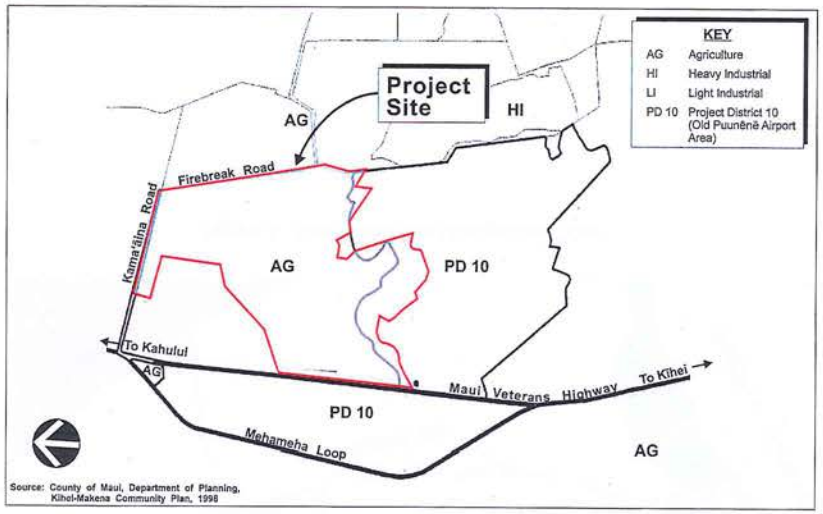

Figure 6. Kihei-Makena Community Plan Map

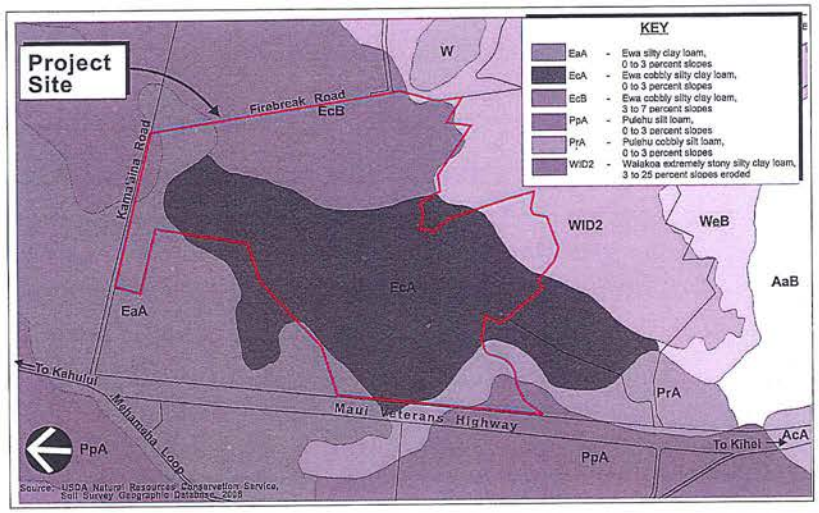

Figure 7. Soil Classification Map

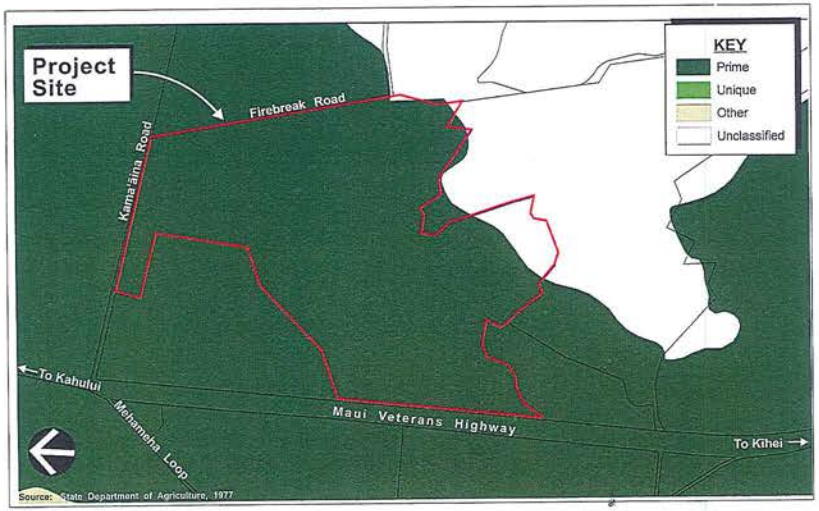

Figure 8. Agricultural Lands of Importance to the State of Hawai'i

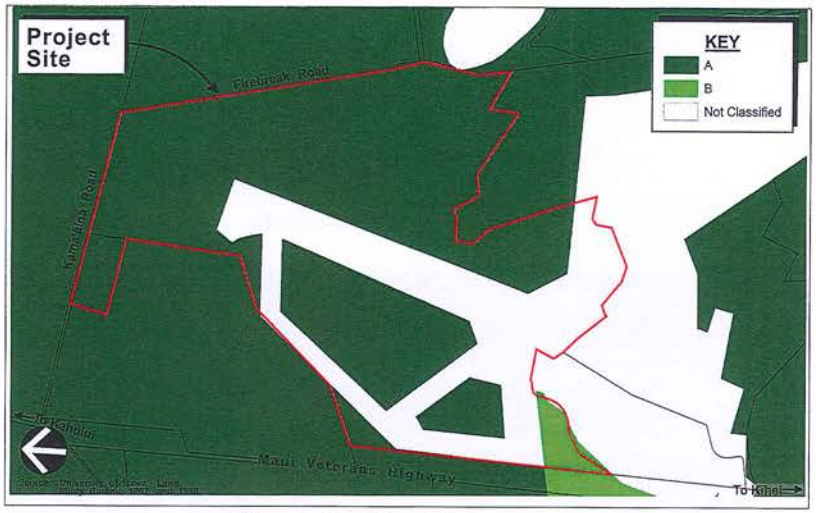

Figure 9. Land Study Bureau Map



Figure 10. HC&S Agricultural Plan

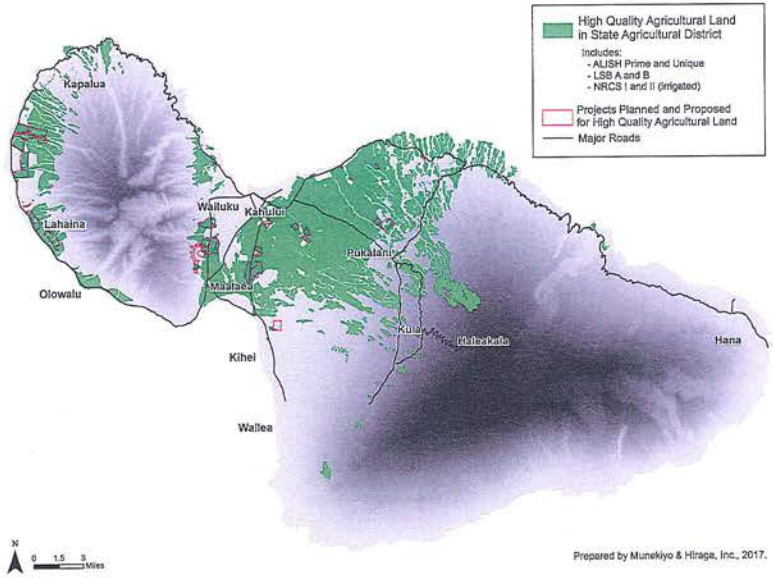

Figure 11. High-Quality Farmland, Maui

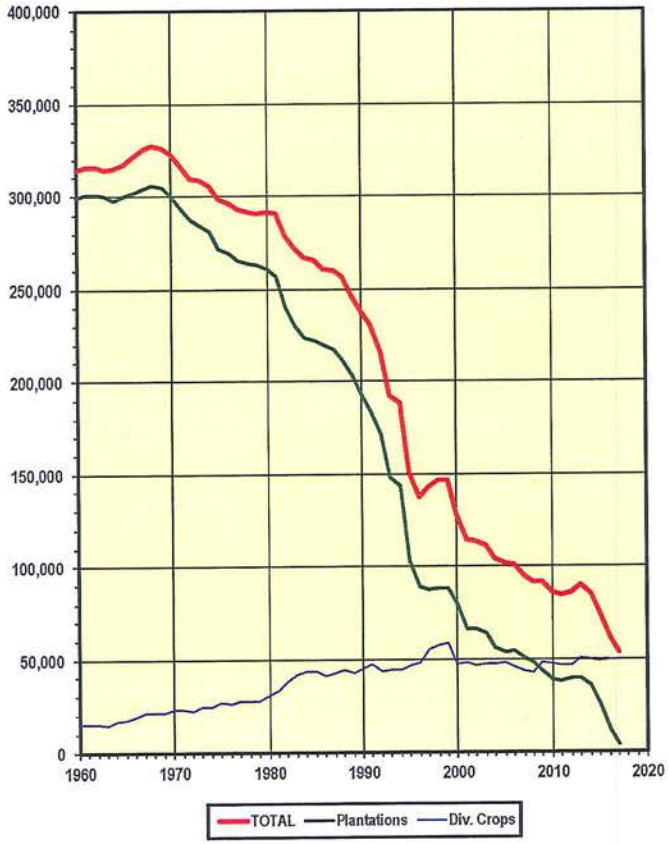

Figure 12. Acreage in Crop, Statewide 1960 to 2017

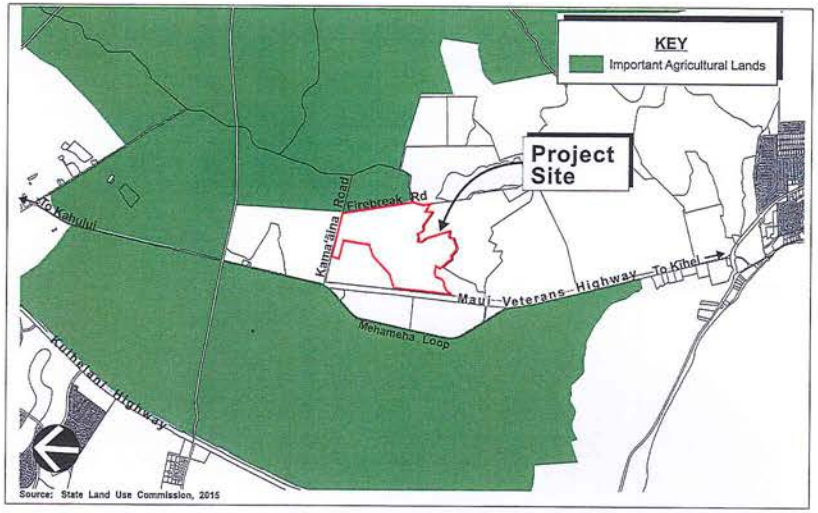

Figure 13. Important Agricultural Lands

APPENDIX

F

BIOLOGICAL RESOURCES SURVEY

BIOLOGICAL RESOURCES SURVEY

for the

DLNR INDUSTRIAL AND BUSINESS PARK

PULEHUNUI, MAUI, HAWAII

by

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Environmental Consultant
Kokomo, Maui
January 2017

Prepared for:
State of Hawaii
Department of Land and Natural Resources

FLORA AND FAUNA SURVEY
DLNR INDUSTRIAL AND BUSINESS PARK
PULEHUNUI, MAUI, HAWAII

INTRODUCTION

The DLNR Industrial and Business Park Project lies on 285 acres of State land along the Maui Veterans Highway (TMK (2) 3-8-08:1) (see Figure 1). This biological resources survey was initiated by the State in compliance with environmental requirements of the planning process.

SITE DESCRIPTION

The project area lies on gently sloping land between the elevations of 95 feet and 120 feet. It is an area that only receives 12 inches to 14 inches of rainfall on average per year (Armstrong, 1983). The soils in the area are classified as Ewa Silty Clay Loam, 0 – 3% slopes and Ewa Cobbly Silty Clay Loam, 0 – 3% slopes which are both deep, well-drained alluvial soils (Foote et al, 1972).

Most of the project area was leased to Alexander & Baldwin for sugar cane production, while a small portion of the area was used by the Department of Agriculture for livestock pens. With the closing of the sugar operation in 2016, the last crop was recently harvested and the lands are now fallow. Vegetation consists mostly of newly sprouted grasses and herbaceous plants. Much of the area is still bare of significant vegetation.

SURVEY OBJECTIVES

This report summarizes the findings of a flora and fauna survey of the proposed DLNR Industrial and Business Park Project which was conducted in January 2017. The objectives of the survey were to:

1. Document what plant, and animal species occur on the property or may likely occur in the existing habitat.

2. Document the status and abundance of each species.

3. Determine the presence or likely occurrence of any native flora and fauna, particularly any that are Federally listed as Threatened or Endangered. If such occur, identify what features of the habitat may be essential for these species.

4. Determine if the project area contains any special habitats which if lost or altered might result in a significant negative impact on the flora and fauna in this part of the island.

BOTANICAL SURVEY REPORT

SURVEY METHODS

A walk-through botanical survey method was used for covering the entire project area. Old agricultural roads provided vehicular access to all areas. Notes were made on plant species, distribution and abundance as well as on terrain and substrate.

DESCRIPTION OF THE VEGETATION

Most of the vegetation in the recently fallow fields was still sparse and low in stature. Recent winter rains had stimulated vigorous sprouting of grasses and herbaceous plants. A total of 45 plant species were recorded during the survey. Two species were abundant throughout the area including sugar cane (*Saccharum officinarum*) which was sprouting from remnant rootstock, and 'uhaloa (*Waltheria indica*) a hardy indigenous native shrub. Three species were of common occurrence including, nut sedge (*Cyperus rotundus*), buffelgrass (*Cenchrus ciliaris*) and cheeseweed (*Malva parviflora*). Just two hardy indigenous native plants were recorded in the area, the 'uhaloa and the 'ilima (*Sida fallax*). The remaining forty three species were all non-native grasses and agricultural weeds.

DISCUSSION AND RECOMMENDATIONS

The vegetation throughout the project area is dominated by non-native species that are of no particular environmental interest or concern. Just two common indigenous plants, 'ilima and 'uhaloa were found growing in the area.. No federally listed Endangered or Threatened plant species (USFWS, 2016) were found, nor do any plants that are candidates for such status occur on the project area. No special plant habitats occur on or near the project and no potential wetlands occur in this dry upland site.

This project is not expected to have any significant negative impacts on the botanical resources in this part of Maui. No recommendations regarding botanical resources are deemed necessary or appropriate.

PLANT SPECIES LIST

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

For each species, the following information is provided:

1. Scientific name with author citation

2. Common English or Hawaiian name.

3. Bio-geographical status. The following symbols are used:

   endemic = native only to the Hawaiian Islands; not naturally occurring anywhere else in the world.
   indigenous = native to the Hawaiian Islands and also to one or more other geographic area(s).
   Polynesian = all those plants brought to Hawaii during the course of Polynesian migrations
   non-native = all those plants brought to the islands intentionally or accidentally after western contact.
   .

4. Abundance of each species within the project area:

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

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
MONOCOTS			
CYPERACEAE (Sedge Family)			
Cyperus rotundus L.	nut sedge	non-native	common
POACEAE (Grass Family)			
Cenchrus ciliaris L.	buffelgrass	non-native	common
Chloris barbata (L.) Sw.	swollen fingergrass	non-native	uncommon
Cynodon dactylon (L.) Pers.	Bermuda grass	non-native	rare
Eragrostis pectinacea (Michx.) Nees	Carolina lovegrass	non-native	rare
Megathyrsus maximus (Jacq.) Simon & Jacobs	Guinea grass	non-native	uncommon
Melinis repens (Willd.) Zizka	Natal redtop	non-native	rare
Saccharum officinarum L.	sugar cane	non-native	abundant
DICOTS			
AMARANTHACEAE (Amaranth Family)			
Amaranthus spinosus L.	spiny amaranth	non-native	rare
Atriplex subereta Verd.	saltbush	non-native	rare
Kali tragus (L.) Scop.	tumbleweed	non-native	rare
APOCYNACEAE (Dogbane Family)			
Asclepias physocarpa (E.Mey.) Schlect.	baloon plant	non-native	rare
ASTERACEAE (Sunflower Family)			
Bidens pilosa L.	Spanish needle	non-native	rare
Emilia fosbergii Nicolson	red pualele	non-native	rare
Pluchea carolinensis (Jacq.) G. Don	sourbush	non-native	rare
Pluchea indica L.	Indian fleabane	non-native	rare
Tridax procumbens L.	coat buttons	non-native	rare
Verbesina encelioides (Cav.) Benth. & Hook.	golden crown-beard	non-native	rare
BORAGINACEAE (Borage Family)			
Heliotropium procumbens Mill.	four-spike heliotrope	non-native	rare
CLEOMACEAE (Cleome Family)			
Cleome gynandra L.	wild spider flower	non-native	rare
CONVOLVULACEAE (Morning Glory Family)			
Ipomoea obscura (L.) Ker - Gawl.	obscure morning glory	non-native	uncommon
Ipomoea triloba L.	little bell	non-native	rare
Merremia aegyptia (L.) Urb.	hairy merremia	non-native	rare
CUCURBITACEAE (Gourd Family)			
Cucumis dipsaceus Ehrenb. Ex Spach	hedgehog gourd	non-native	rare
Momordica charantia L.	bitter melon	non-native	uncommon
EUPHORBIACEAE (Spurge Family)			
Euphorbia cyathophora J.A. Murray	Mexican fire plant	non-native	rare
Euphorbia hirta L.	hairy spurge	non-native	rare
Ricinus communis L.	Castor bean	non-native	uncommon

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
FABACEAE (Pea Family)			
Chamaecrista nictitans (L.) Moench	partridge pea	non-native	rare
Crotalaria incana L.	fuzzy rattlepod	non-native	uncommon
Crotalaria pallida Aiton	smooth rattlepod	non-native	rare
Crotalaria retusa L.	rattlepod	non-native	rare
Desmanthus pernambucanus (L.) Thellung	slender mimosa	non-native	uncommon
Leucaena leucocephala (Lam.) de Wit	koa haole	non-native	uncommon
Prosopis pallida (Humb. & Bonpl. Ex Willd.) Kunth	kiawe	non-native	rare
Senna occidentalis (L.) Link	coffee senna	non-native	rare
MALVACEAE (Mallow Family)			
Abutilon grandifolium (Willd.) Sweet	hairy abutilon	non-native	uncommon
Malva parviflora L.	cheese weed	non-native	common
Malvastrum coromandelianum (L.) Garcke	false mallow	non-native	rare
Sida fallax Walp.	'ilima	indigenous	rare
Sida rhombifolia L.	arrow-leaved sida	non-native	rare
Waltheria indica L.	'uhaloa	indigenous	abundant
NYCTAGINACEAE (Four-o'clock Family)			
Boerhavia coccinea Mill.	scarlet spiderling	non-native	uncommon
PAPAVERACEAE (Poppy Family)			
Argemone mexicana L.	Mexican poppy	non-native	rare
SOLANACEAE (Nightshade Family)			
Nicandra physalodes (L.) Gaertn.	apple of Peru	non-native	rare

FAUNA SURVEY REPORT

SURVEY METHODS

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

RESULTS

MAMMALS

Signs of just two non-native mammals were seen during two site visits. Tracks of domestic dogs (*Canis familiaris*) and feral pigs (*Sus scrofa*) were seen in the soil. Several other common non-native mammals, however, could be expected to be occasionally found in this habitat. These include the mongoose (*Herpestes auropunctatus*), feral cats (*Felis catus*), rats (*Rattus* spp.) and mice (*Mus domesticus*). Taxonomy and nomenclature follow Tomich (1986).

A special effort was made to look for the native Hawaiian hoary bat by making an evening survey of the project area. When present in an area these bats can be easily identified as they forage for insects, their distinctive flight patterns clearly visible in the glow of twilight. No evidence of such activity was observed though visibility was excellent. In addition, a bat detecting device was used at two locations, set to the frequency of 27,000 to 28,000 Hertz which is the typical range within which these bats are known to echolocate for flying insect prey. No activity was detected using this device.

BIRDS

Birdlife was moderate in species diversity but sparse in numbers of individuals seen. Ten bird species were recorded during two site visits. Taxonomy and nomenclature follow American Ornithologists' Union (2016). Two species were of uncommon occurrence, zebra dove (*Geopelia striata*) and black francolin (*Francolinus francolinus*). The remaining eight species were rare in the project area.

Three native bird species were seen in the project area, the endemic nēnē goose (*Branta sandvicensis*), the indigenous 'auku'u or black-crowned night-heron (*Nycticorax nycticorax hoactli*) and the migratory kōlea or Pacific golden-plover (*Pluvialis fulva*).

A few other non-native birds might occasionally be seen here, but the habitat is not suitable for Hawaii's native forest birds and seabirds that nest high in the mountains beyond the range of mosquitoes and the avian diseases they carry and transmit.

FISH

One fish species, the Mozambique tilapia (*Oreochromis mossambicus*) was found inhabiting an old plantation irrigation ditch that runs through the project area.

MOLLUSKS

One clam species, the Asian freshwater clam (*Corbicula fulminea*) was also found inhabiting the same ditch.

INSECTS

Insects were rather modest in species diversity and in total numbers. A total of 13 species, representing seven insect orders, were found in the project area during two site visits. Taxonomy and nomenclature follow Nishida et al (1992). Two species were of common occurrence, long-tailed blue butterfly (*Lampides boeticus*) and the dung fly (*Musca sorbens*). Just one native dragonfly species was recorded, the indigenous globe skimmer (*Pantala flavescens*).

DISCUSSION AND RECOMMENDATIONS

The wildlife within the project area was composed mostly of non-native species that are of no special conservation concern. Just three bird species and one insect native to Hawaii are here addressed.

Nēnē

The nēnē goose is listed as an Endangered species and is endemic to the Hawaiian islands. The nēnē is being propagated on several islands, including Maui, and their numbers are increasing. Two sub-adult, unbanded nēnē were observed on open ground in the fallow, recently harvested cane field. They were feeding on succulent young grasses around mud puddles from a recent winter storm. Nēnē are powerful, wide-ranging fliers and are opportunistic feeders. These birds can range over large areas taking advantage of feeding and nesting opportunities in a variety of habitats. This old cane field provides a temporary feeding opportunity which will disappear during the dry season. This habitat can be described as important alternative habitat but is not critical to their survival. As Endangered Species nēnē carry federal protections that prohibit actions that might harass, injure or kill them. It is recommended that any occupants and users of the land in this project area be informed and educated regarding nēnē and their status and protections. Should nēnē show up they should be given space free of harassment and should be allowed to leave at their own convenience.

'Auku'u

The 'auku'u is an indigenous heron that is widespread in Hawaii as well as in Mexico and the southern United States. They have no heightened conservation concerns or protections. They are obligate waterbirds and were found in the old plantation irrigation ditch where they feed on tilapia fish. No recommendations are made regarding the 'auku'u.

Kōlea

The kōlea are migratory birds that are common during the winter months throughout Hawaii in a wide variety of habitats. They are of no special conservation concern and no recommendations are made regarding the kōlea.

Globe skimmer dragonfly

The globe skimmer is an indigenous dragonfly which is abundant in Hawaii and found throughout the tropics and subtropics worldwide. It is of no conservation concern and no recommendations are made regarding the globe skimmer.

Seabirds

While no seabirds were found in the project area, two federally protected species, the Endangered 'ua'u or Hawaiian petrel (*Phaeopygia sandwichensis*) and the Threatened 'a'o or Newells shearwater (*Puffinus newelli*) are known to fly from the ocean at dusk to their nesting burrows high in the mountains and return to the ocean at dawn during the breeding season between March and November. They fly over the lowlands during these flights. These birds are known to be disoriented by bright lights and strike tall structures and be injured and grounded where they become vulnerable to vehicle strikes and predators. During October and November fledging young birds are particularly vulnerable to these threats. It is recommended that any outdoor lighting be hooded so the light is only visible from below.

Hawaiin hoary bat

While no Endangered bats were detected during the survey, they may occasionally occupy this area. They are known to leave their young in trees during the breeding season while they are foraging for food. This project area, which was recently in sugarcane production, is now fallow and contains no trees or other vegetation over 10 feet in height. These bats are not likely to use this area for rearing young although the adults could transit the area when hunting for flying nocturnal insects. No recommendations are made regarding these bats.

Blackburn's sphinx moth

No Endangered Blackburn's sphinx moth (*Manduca blackburni*) adults, larvae or eggs were observed during the survey and none of their host plants were found either. These moths are highly linked to specific plants in the nightshade family, and without these host plants they could not effectively breed in the project area. No recommendations are made with regard to the Blackburn's sphinx moth.

As a result of these findings, it is determined that there is little of conservation concern other than the above comments and recommendations. This project is not expected to have a significant negative impact on the native wildlife resources in this part of Maui.

ANIMAL SPECIES LIST

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

1. Common name
2. Scientific name
3. Bio-geographical status. The following symbols are used:

   endemic = native only to Hawaii; not naturally occurring anywhere else in the world.

   indigenous = native to the Hawaiian Islands and also to one or more other geographic area(s).

   non-native = all those animals brought to Hawaii intentionally or accidentally after western contact.

   migratory = spending a portion of the year in Hawaii and a portion elsewhere. In Hawaii the migratory birds are usually in the overwintering/non-breeding phase of their life cycle.

4. Abundance of each species within the project area:

   abundant = many flocks or individuals seen throughout the area at all times of day.

   common = a few flocks or well scattered individuals throughout the area.

   uncommon = only one flock or several individuals seen within the project area.

   rare = only one or two seen within the project area.

COMMON NAME	SCIENTIFIC NAME	STATUS	ABUNDANCE
MAMMALS			
Sus scrofa L.	pig	non-native	rare
Canis familiaris L.	domestic dog	non-native	rare
BIRDS			
Geopelia striata L.	zebra dove	non-native	uncommon
Francolinus francolinus L.	black francolin	non-native	uncommon
Anas platyrhynchos L.	mallard duck	non-native	rare
Nycticorax nycticorax hoactli Gmelin	'auku'u	indigenous	rare
Carpodacus mexicanus Muller	house finch	non-native	rare
Lonchura malacca L.	chestnut mannikin	non-native	rare
Branta sandvicensis Vigors	nēnē goose	endemic	rare
Pluvialis fulva Gmelin	kōlea	migratory	rare
Streptopelia chinensis Scopoli	spotted dove	non-native	rare
Francolinus pondicerianus Gmelin	gray francolin	non-native	rare
FISH			
Oreochromis mossambicus W.K.H. Peters	Mozambique tilapia	non-native	uncommon
MOLLUSKS			
Corbicula fluminea Muller	Asian freshwater clam	non-native	uncommon

COMMON NAME	SCIENTIFIC NAME	STATUS	ABUNDANCE
INSECTS			
Order DIPTERA - flies			
MUSCIDAE (Housefly Family)			
Musca domestica L.	housefly	non-native	uncommon
Musca sorbens Wiedemann	dung fly	non-native	common
SYRPHIDAE (Hoverfly Family)			
Ornidia obesa Fabricius	green hoverfly	non-native	rare
Order HEMIPTERA - true bugs			
PSYLLIDAE (Psyllid Family)			
Heteropsylla cubana Crawford	koa haole psyllid	non-native	uncommon
Order HYMENOPTERA - bees, wasps			
FORMICIDAE (Ant Family)			
Pheidole megacephala Fabricius	big-headed ant	non-native	rare
Order LEPIDOPTERA - butterflies, moths			
LYCAENIDAE (Gossamer-winged Butterfly Family)			
Lampides boeticus L.	long tail blue butterfly	non-native	common
NOCTUIDAE (Owlet Moth Family)			
Achaea janata L.	Castor semi-looper	non-native	uncommon
NYMPHALIDAE (Brush-footed Butterfly Family)			
Danaus plexippus L.	monarch butterfly	non-native	uncommon
PIERIDAE (Small White and Sulphur Butterfly Family)			
Eurema niccipe Cramer	sleepy orange butterfly	non-native	rare
Pieris rapae L.	cabbage butterfly	non-native	rare
Order MANTODEA - mantises			
Tenodera angustipennis Saussure	narrow-winged mantis	non-native	rare
Order ODONATA - dragonflies, damselflies			
LIBELLULIDAE (Skimmer Dragonfly Family)			
Pantala flavescens Fabricius	globe skimmer	indigenous	uncommon
Order ORTHOPTERA - grasshoppers, crickets			
ACRIDIDAE (Grasshopper Family)			
Schistocerca nitens Thunberg	graybird grasshopper	non-native	rare



Figure 2. View southwest across the DLNR Industrial and Business Park project area showing a recently harvested sugar cane field mostly devoid of vegetation.



Figure 3. View west across the project area toward Maui Veterans Highway and West Maui.



Figure 1. DLNR Industrial and Business Park Project Map



Figure 4. View southwest across the project area showing field with regrowth of cane, other grasses and 'uhaloa.



Figure 5. Two sub-adult nēnē feeding on newly sprouted grasses following recent rains. This is temporary habitat for the nēnē which will move on to other areas during the dry season.

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