

Environmental Condition of Property Report

Mākua Properties, O'ahu, Hawai'i

Tract 1 (TMKs 8-1-01-07 & 8-2-01-24),

Tract 2 (TMKs 8-1-01-08, 8-2-01-22, 8-2-01-03, and 8-2-01-01)

Tract 3 (8-2-01-25)

MARCH 2017



PREPARED FOR | DIRECTORATE OF PUBLIC WORKS,
U.S. ARMY GARRISON, HAWAII

PREPARED BY | U.S. ARMY CORPS OF ENGINEERS, HONOLULU DISTRICT
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**Tract 2 (TMKs 8-1-01-08, 8-2-01-22, 8-2-01-03, and
8-2-01-01)**

Tract 3 (TMK 8-2-01-25)

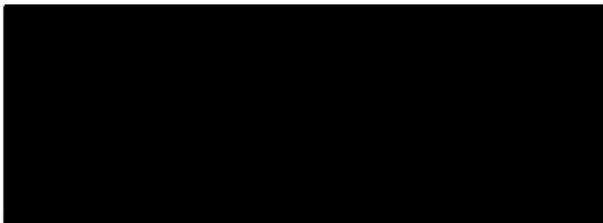
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U.S. Army Garrison, Hawaii**

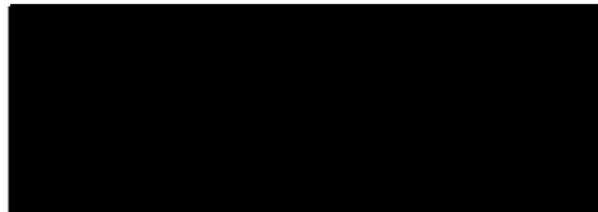
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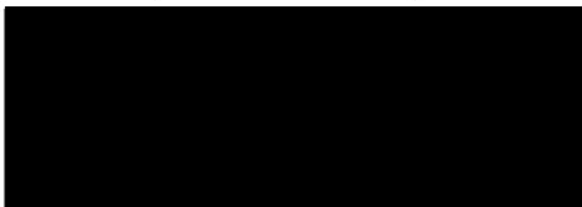
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Executive Summary

This Environmental Condition of Property (ECoP) investigation was conducted to evaluate the current environmental condition of the subject property by examining current and historical uses of the property and adjoining properties. The potential for environmental contamination of a property from hazardous substances, petroleum products, or other environmental concerns is evaluated through an ECoP investigation.

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 requires Federal agencies to evaluate the environmental condition of property and to take remedial actions as necessary to protect human health and the environment before transferring property. Section 120(h) of CERCLA establishes a regulatory process for documenting the suitability of property for acquisition or divestment. Army Regulation (AR) 200-1 (Chapters 15-5 and 15-6) requires preparation of ECOP documents for Army Federal real property transactions.

The planned ECoP scope of work consisted of three parts: (1) a Phase I Environmental Site Assessment, (2) a Phase II Environmental Site Assessment, and (3) Property Characterization. The purpose, process, and findings for each investigation phase are summarized below:

Part 1: Phase I Environmental Site Assessment

A Phase I Environmental Site Assessment (ESA) is performed for acquisition actions when the property is not Federally owned¹. Phase I ESAs are conducted in accordance with the United States Environmental Protection Agency (EPA) All-Appropriate Inquiry (AAI) rule (40 CFR, Part 312) as described in the American Society for Testing and Materials (ASTM) Standard E1527-13. The purpose of a Phase I ESA is to document the existing environmental condition of the property in a manner that demonstrates “AAI.” The investigation includes researching historical land uses, reviewing historical environmental database information, and conducting field surveys and interviews.

The Mākua Properties, also referred to as the “Subject Properties” or individually as “Tract 1, Tract 2, and Tract 3, are located west of the Wai‘anae Mountain Range in the western portion of O‘ahu , Hawai‘i. Tract 1 and 3 are situated within Mākua Valley below the Waianae Mountain Range and are part of the Mākua Military Reservation (MMR), which have strict security requirements for access. The Kuaokalā hiking trail, managed by the State of Hawai‘i Department of Land and Natural Resources (DLNR), Na ‘Ala Hele Trail program, runs along the northeast border of Tract 1, TMK 8-1-01-07 but is difficult to access due to topography.

Tract 2 is situated west of Farrington Highway along the ocean. Tract 2 is characterized by relatively flat topography, ranging from sea level to slightly above sea level with beach, rocky areas, and shrubby vegetation. Tract 2 does not require authorization for access, and portions of the property are utilized for recreational purposes and for military beach training.

¹ US Army Public Health Command (undated), Environmental Condition of Property (ECoP) Investigations, Technical Information Paper No. [REDACTED]

The Properties are owned by the State of Hawai'i, and are leased by the Army until 2029 (excluding TMK 8-2-01-03, which is owned by Mākuā Protestant Church and for which the Army has no record of a lease agreement). The Properties are largely comprised of conservation land. Use of the Property does not appear to have changed significantly in the past 50 years.

The Phase I ESA requires review of environmental regulatory databases to assess historical environmental concerns on the properties and nearby properties. Environmental Data Resources, Inc. (EDR), a database search service, acquires data from government agencies and reviews proprietary database lists of historical polluters. The EDR report was augmented with additional targeted searches of Hawai'i regulatory databases. No environmental concerns were identified in the regulatory agency database search. One orphan (i.e., a site for which EDR could not find addresses or mapping information) listing was found to be within Tract 1; this listing is related to listing MMR and describes several "written informal" notices of violation related to Resource Conservation and Recovery Act (RCRA) recordkeeping.

Two buildings are present on Tract 1 (TMK 8-1-01-07); one of the buildings is visible from Farrington Highway (Figure 2b). The larger structure (21°32'12.02"N, 158°13'47.11"W) is approximately 3,000 square feet and the second structure (21°32'13.66"N and 158°13'46.16"W) is approximately 100 square feet; ownership signage was not observed. According to Range Control, the larger structure was used as a communications building and the smaller one located north of the communications building held an emergency generator.

Tracts 1 and 3 have been under US Army control since May 1943 and field observations in May 2016 confirmed military training land use. No indications of environmental concern were identified during the site reconnaissance of Tracts 1 and 3.

Solid (e.g., general refuse, tires, plastic) and potentially hazardous wastes (e.g., discarded electronics) were observed dumped in vegetated areas throughout Tract 2. This is likely a dynamic situation, as the State conducts clean-up events, and other materials are likely to be dumped in this unsecured area. The degree of deterioration of some trash items observe indicate illegal dumping is a long-standing issue. The abandonment of these items does not pose a recognized environmental condition (REC), as defined by ASTM Standard E1527-13, to Tract 2 as no releases of hazardous substances or petroleum have been documented.

Review of environmental reports obtained from the Army indicate that Tracts 1 and 3, located within the boundaries of the MMR, have been subject to past bombing, shelling, and small arms fire over a period of many years. Past UXO sweeps have collected tons of ordnance material, and additional UXO is occasionally encountered during Army operations at the facility. The likely presence of additional UXO is characterized as a REC given the physical hazard of UXO as well as the possibility that human health and the environment could be exposed to hazardous substances used in munitions. Specific locations of potential UXO were not identified.

Tract 2 has been largely investigated and cleared of UXO, although occasional reports of UXO found by the public still occur. Soil sampling on Tract 2 has identified munitions constituents, but not at concentrations of concern. Therefore, the UXO on Tract 2 is identified as an Historical Recognized Environmental Condition (HREC).

Additional environmental concerns that are not characterized as RECs (no observed or known release of hazardous substances or petroleum products) include:

- Fugitive dumping and litter observed throughout Tract 2, apparently a long-standing issue based on a DLNR press release.
- A cemetery identified on Tract 2.

Part 2: Phase II Environmental Site Assessment

The purpose of a Phase II assessment is to obtain a better understanding of the potential environmental concerns associated with a property. Environmental and/or geophysical sampling is conducted to determine the absence or presence, or assess the extent, of suspected contaminants identified during a Phase I ESA.

No additional investigation or sampling of the Subject Properties is recommended as part of this Environmental Condition of Property (ECOP) study. Therefore, a Phase II ESA will not be conducted. The Army has conducted several studies in Mākua related to munitions constituents, and has determined that Munitions and explosives of concern (MECs) associated with MMR source areas are not expected to migrate off-range at levels that pose an unacceptable risk to human or ecological receptors (EA, 2013). The Army conducts periodic reviews under the Operational Range Assessment Program and evaluates whether changed conditions may prompt a sampling effort.

Part 3: Property Characterization

Based on the findings of the Phase I and Phase II ESAs, one of seven ECoP categories is assigned to the property, or the property may be divided into parcels and an ECoP category assigned to each parcel. ECOP Environmental Condition of Property (ECoP) guidance² provides for properties to be categorized into one of seven categories:

Category 1: Areas where no release or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas).

Category 2: Areas where only release or disposal of petroleum products has occurred.

Category 3: Areas where release, disposal, and/or migration of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response.

Category 4: Areas where release, disposal, and/or migration of hazardous substances has occurred, and where all remedial response actions necessary to protect human health and the environment have been taken.

² US Army Public Health Command (undated), Environmental Condition of Property (ECoP) Investigations, Technical Information Paper No. [REDACTED]

Category 5: Areas where release, disposal, and/or migration of hazardous substances has occurred, and where all remedial response actions necessary to protect human health and the environment have not yet been taken.

Category 6: Areas where release, disposal, and/or migration of hazardous substances has occurred, but where required actions have not yet been implemented.

Category 7: Areas that are not evaluated or require additional evaluation.

Based on the results of the Phase I ESA, the **Makua Parcels** are categorized as follows:

Tracts 1 and 3: Category 5: *Areas where release, disposal, and/or migration of hazardous substances has occurred, and where all remedial response actions necessary to protect human health and the environment have not yet been taken.* Although additional investigation is not recommended as part of this ECoP study, the presence of UXO is an unknown human and environmental hazard until the site is cleared of UXO.

Tract 2: Category 4: *Areas where release, disposal, and/or migration of hazardous substances has occurred, and where all remedial response actions necessary to protect human health and the environment have been taken.* The site has been the subject of several UXO clearing and investigation activities, and several studies have recommended no further action.

TABLE ES-1: SUMMARY OF PROPERTY CHARACTERIZATION

TMKs:	8-1-01-07 & 8-2-01-24	8-1-01-08, 8-2-01-22, 8-2-01-03 & 8-2-01-01	8-2-01-25
Subject Parcel:	Tract 1	Tract 2	Tract 3
Land Area (acres approx.):	716	60	6
State Land Use Classification	Preservation	Preservation	Preservation
Current Occupants/ Tenants:	State of Hawai'i (Owner) U.S. Army (Lessee)	TMK 8-1-01-08, TMK 8-2-01-01 & 8-2-01-22: State of Hawai'i (Owner); U.S. Army (Lessee) TMK 8-2-01-03: Mākua Protestant Church (Owner)	State of Hawai'i (Owner) U.S. Army (Lessee)
Environmental Concerns and Recommendations	REC: Likely presence of UXO; No sampling recommended at active base.	HREC: Tract has been investigated and cleared of UXO; previous studies recommended no further action; no sampling or further evaluation recommended.	REC: Likely presence of UXO; No sampling recommended at active base.
ECoP Category	5	4	5

PART 1:

PHASE I ENVIRONMENTAL SITE ASSESSMENT

Table of Contents

List of Tables.....	iii
List of Figures	iii
List of Appendices.....	iii
Acronyms	iv
Section 1: Summary	1
Section 2: Introduction	4
2.1 Purpose.....	4
2.2 Scope of Services	5
2.3 Significant Assumptions	5
2.4 Limitations and Exceptions	6
2.5 User Reliance.....	7
Section 3: Subject Properties Description.....	8
3.1 Location and Legal Description.....	8
3.2 Subject Properties and Vicinity General Characteristics.....	9
3.3 Current use of the Subject Properties	9
3.4 Descriptions of Structures, Roads and Other Improvements.....	10
3.5 Current Uses of the Adjoining Properties.....	10
Section 4: User Provided Information	11
4.1 Title Records	11
4.2 Environmental Liens or Activity and Use Limitations	11
4.3 Specialized Knowledge	11
4.4 Commonly Known or Reasonably Ascertainable Information	11
4.5 Valuation Reduction for Environmental Issues	11
4.6 Owner, Property Manager, and Occupant Information	11
4.7 Reason for Performing Phase I.....	12
4.8 Other Information	12
Section 5: Records Review.....	13
5.1 Standard Environmental Record Sources.....	13
5.2 Environmental Records Review Findings	14
5.3 Additional Environmental Record Sources.....	16
5.3.1 EDR Additional Sources.....	16
5.3.2 Environmental Reports Provided by the Army	16
5.4 Physical Setting Record Sources.....	19
5.4.1 Current USGS 7.5-Minute Topographic Map	19
5.4.2 Geology/Soils	19
5.4.3 Hydrology and Hydrogeology	20
5.5 Historical Record Sources.....	21
5.5.1 Sources of Historical Information	21
5.5.2 Site and Vicinity History.....	22

Table of Contents (cont'd)

5.5.3	Site Historical Concerns	23
Section 6:	Subject Properties Reconnaissance.....	24
6.1	Methodology and Limiting Conditions	24
6.2	General Site Setting	24
6.2.1	Current Use(s) of the Subject Property	24
6.2.2	Indications of Past Use(s) of the Subject Property	24
6.2.3	Current Use(s) and Indications of Past Use(s) of Adjoining Properties	24
6.3	Exterior and Interior Observations	24
Section 7:	Interviews.....	29
7.1	Interviews with Owners	29
7.2	Interviews with Site Managers	29
7.3	Interviews with Occupants	29
7.4	Interviews with Local Government Officials	29
7.5	Interviews with Others.....	29
Section 8:	Findings and Opinion.....	30
Section 9:	Conclusions	31
Section 10:	Deviations & Data Gaps	32
Section 11:	References.....	33
Section 12:	Signatures of Environmental Professionals	35
Section 13:	Qualifications of Environmental Professionals	36

Table of Contents (cont'd)

List of Tables

Table 1:	Summary of Subject Properties Description.....	1
Table 2:	Property Legal and Ownership Information	8
Table 3:	Standard Regulatory Sources and Search Distances	13
Table 4:	Historical Sources	21
Table 5:	Summary of Reconnaissance Observations	25

List of Figures

Figure 1:	Property Location Map
Figure 2a:	Natural Features
Figure 2b:	Site Features
Figure 3a:	Field Observations
Figure 3b:	Tract 2 Field Observations

List of Appendices

Appendix A: Environmental Database Review
EDR DataMap™ Area Study Report
Table of EDR “Orphan Sites”
EDR Environmental LienSearch™
EDR DataMap™ Well Search Report
Appendix B: Mākua Environmental Reports
Appendix C: Historical Records
Aerial Photographs
Topographic Maps
Lease Documents
Appendix D: Site Reconnaissance Photographs
Appendix E: User Questionnaire

Acronyms

AAI	All Appropriate Inquiry
ASTM	American Society for Testing and Materials
AUL	Activity and Use Limitation
BATA	Beach Assault Training Area
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CFR	Code of Federal Regulations
CORRACTS	RCRA facilities subject to Corrective Action
CREC	Controlled Recognized Environmental Condition
CSM	Conceptual Site Model
DLNR	Department of Land and Natural Resources
DoD	Department of Defense
DOFAW	Division of Forestry and Wildlife
ECOP	Environmental Condition of Property
EDR	Environmental Data Resources, Inc.
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency (United States)
ERNS	Emergency Response Notification System
ESA	Environmental Site Assessment
FINDS	Facility Index System
GIS	Geographic Information System
HDOH	Hawaii Department of Health
HEER	Hazard Evaluation and Emergency Response (office of HDOH)
HoLIS	Honolulu Land Information System (City and County of Honolulu)
HREC	Historical Recognized Environmental Conditions
HRS	Hawaii Revised Statute
LLP	Landowner Liability Protection
MC	Munitions Constituents
MD	Munitions Debris
MEC	Munitions and explosives of concern
MMR	Mākua Military Reservation
MMRP	Military Munitions Response Program
MRS	Munitions Response Site
MTA	Mākua Training Area
N/A	Not applicable
NFA	No Further Action
NFRAP	No Further Remedial Action Planned
NMD	Non-munitions debris
NPL	National Priorities List (Superfund sites)
RCRA	Resource Conservation and Recovery Act
RCRIS	Resource Conservation and Recovery Information System
REC	Recognized Environmental Condition
SEMS	Superfund Enterprise Management System
SHWB	Solid and Hazardous Waste Branch (of HDOH)
SHWS	State Hazardous Waste Site
SVOC	Semi-volatile organic compound
TMK	Tax Map Key
TSD	Treatment, Storage, or Disposal (RCRA classification)
USDA	United States Department of Agriculture
USGS	United States Geological Survey (U. S. Dept. of the Interior)
UXO	Unexploded ordnance
VOC	Volatile organic compound
VRP	Voluntary Response Program

Section 1: Summary

A Phase I Environmental Site Assessment (ESA) has been prepared for three tracts of real estate (Figure 1, Table 1), collectively referenced as the “Mākua Tracts,” also referred to as the “Subject Properties”, or individually as “Tract 1, Tract 2, and Tract 3” throughout this Phase I ESA report (Report). The three tracts are irregularly-shaped parcels of State or private land around existing US Governmental lands (Figures 1 and 2a).

TABLE 1: SUMMARY OF SUBJECT PROPERTIES DESCRIPTION

TMKs:	8-1-01-07 & 8-2-01-24	8-1-01-08, 8-2-01-22, 8-2-01-03 & 8-2-01-01 (North to South)	8-2-01-25
Subject Parcel:	Tract 1	Tract 2	Tract 3
Land Area (acres approx.):	716	60	6
Number of Buildings:	2	0	0
Number of Floors:	Single floor	Not Applicable (N/A)	N/A
Building Square Footage:	Approximately 3,150 square feet	N/A	N/A
Type of Construction:	Concrete block	NA	NA
Date of Construction:	Unknown	N/A	N/A
Nature of Use:	Communications building and separate emergency generator building (neither in use); Army training	Public beach access; cemetery; Army training	Army training; active military reservation
Other Improvements:	Kuaokalā hiking trail along northeast border & fencing along southern border to protect areas with sensitive plant species	N/A	N/A
Current Occupants/ Tenants:	State of Hawai'i (Owner) United States of America (Lessee)	<u>TMK 8-1-01-08, TMK 8-2-01-01 & 8-2-01-22:</u> State of Hawai'i (Owner); United States of America (Lessee) <u>TMK 8-2-01-03:</u> Mākua Protestant Church (Owner)	State of Hawai'i (Owner) United States of America (Lessee)

This ESA was conducted in general conformance with the scope of work and limitations of the American Society for Testing and Materials' (ASTM's) Standard Practice for Environmental Site Assessments (ASTM E1527-13), modified as appropriate by ASTM E2247-08, “Phase I

Environmental Site Assessment Process for Forestland or Rural Property.” Any exceptions to or deletions from this practice are described in Section 2.4 of this report.

Independent conclusions presented in this report represent professional judgment based on standard practice, with respect to conditions that existed at the time of the assessment. Detailed information regarding methodology and findings is presented in the main body and appendices of this report. This Summary and the following report are subject to the limitations of non-scope and other considerations as detailed in Section 2.4. This report should be read in its entirety to understand the coverage of the ESA and to better evaluate the information provided.

The Subject Properties are divided into three tracts (Figure 1). The northern portion of Tract 1 (TMK 8-1-01-07) has a land cover type of evergreen forest land. Shrub and brush rangeland land cover is found throughout remaining portions of Tract 1 (TMK 8-2-01-24) and most of Tract 2. Tract 3 (TMK 8-2-01-25) is predominantly land cover type of evergreen forest land. All Tracts have a State Land Use District classification of “Preservation.”

Tracts 1 and 3

Tracts 1 and 3 are within Mākua Military Reservation (MMR) and require authorization and coordination with Army Range Control to access. Visitors must have received unexploded ordnance (UXO) training by the Army and a UXO specialist escort may also be required. Driving access inside Tracts 1 and 3 is limited to dirt roads. The land is characterized by undeveloped shrub and grass land. Tracts 1 and 3 are utilized for Army tactical practices as evidenced by the practice ranges constructed within MMR to mimic targets. Mākua Valley was used from 1920 until 1990 for small arms and artillery firing, helicopter gunnery practice and maneuvers, tactical live-fire training exercises, and ground training of troops by the Department of Defense (DoD) including Army, Hawaii National Guard, Army Reserves, and U.S. Marine Corps. Weapons systems have included M16 rifles, mortars, anti-tank missiles, dynamite, rockets, grenades, and machine guns.

The Kuaokalā hiking trail, managed by the State of Hawai‘i Department of Land and Natural Resources (DLNR), Na ‘Ala Hele Trail program, runs along the northeast border of Tract 1, TMK 8-1-01-07 (Figure 2a). The Kuaokalā trail requires a DLNR hiking permit if accessed from the Ka‘ena Point Tracking Station. Access to Tracts 1 and 3 is extremely restricted, providing little opportunity for fugitive dumping or other sources of environmental concern related to public access.

Tract 2

Tract 2 is characterized by vacant land and public beach access with relatively flat topography, ranging from sea level to just a few feet above sea level. Tract 2 is located west of MMR and Farrington Highway (Figure 2a). A parcel of land owned by the US Government and referred to as the Beach Assault Training Area (BATA) is situated between Tract 2 and Farrington Highway, near the central portion of Tract 2 (Figure 2b). Although the GIS data indicate the BATA property as overlapping Tract 2 in a few locations, the BATA parcel is not part of the subject property.

Tract 2 does not require authorization for access, and portions of the property are utilized for recreational purposes and for military beach training. Historical training activities included naval aerial bombing, shelling from offshore battleships, and amphibious assaults on Mākua Beach. The Army conducts training in accordance with the lease agreement between the Army and the State of Hawai'i.

Environmental Concerns

Tracts 1 and 3, located within the boundaries of the MMR, are identified as areas that have been subject to past bombing, shelling, and small arms fire over a period of many years. Past UXO sweeps have collected tons of ordnance material, and additional UXO is occasionally encountered during Army operations at the facility. The likely presence of additional UXO is characterized as a recognized environmental condition (REC) given the physical hazard of UXO as well as the possibility that human health and the environment could be exposed to hazardous substances used in munitions. Specific locations of potential UXO were not identified.

Tract 2 has been largely investigated and cleared of UXO, although occasional reports of UXO found by the public still occur. Soil sampling on Tract 2 has identified munitions constituents, but not at concentrations of concern. Therefore, the UXO on Tract 2 is identified as an Historical Recognized Environmental Condition (HREC).

Additional environmental concerns that are not characterized as RECs (no observed or known release of hazardous substances or petroleum products) include:

- Fugitive dumping and litter observed throughout Tract 2, apparently a long-standing issue based on a DLNR press release. Types of trash observed at Tract 2 include tire piles, abandoned vehicles, electronics, car parts, old mattresses, and single-use plastic (Figures 3a, 3b).
- A cemetery identified on Tract 2.

Section 2: Introduction

A Phase I Environmental Site Assessment (ESA) has been prepared for three tracts of real estate referenced as the “Mākua Tracts,” also referred to as the “Subject Properties” or individually as “Tract 1”, “Tract 2”, or “Tract 3” throughout this Phase I ESA report (Report). The Army intends to purchase or acquire a new long-term lease on the Subject Properties for the purposes of utilizing the property for military training.

The Mākua Tracts have a State Land Use District classification of Preservation and are zoned P-1, restricted preservation (Tracts 1-3). The Subject Properties’ legal description and ownership are described in Section 3.1.

2.1 Purpose

The purpose of this Phase I ESA is to inform the Army of Recognized Environmental Conditions (RECs), Controlled Recognized Environmental Conditions (CRECs), Historical Recognized Environmental Conditions (HRECs) or Notable Findings pertaining to the Subject Properties.

A recognized environmental condition (REC) refers to the presence or likely presence of any hazardous substance or petroleum product on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term REC includes hazardous substances and petroleum products even under conditions that might be in compliance with laws. The term is not intended to include “de minimis” conditions that do not present a threat to human health and/or the environment and that would not be subject to an enforcement action if brought to the attention of appropriate governmental agencies.

A controlled recognized environmental condition (CREC) refers to a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). *A historical recognized environmental condition (HREC)* refers to an environmental condition that would have been considered a REC in the past, but which is no longer considered a REC based on subsequent assessment or regulatory closure. Conditions considered by the environmental professional to be a CREC or HREC shall be listed in the findings section of the Phase I Environmental Site Assessment report, and as a recognized environmental condition in the conclusions section of the Phase I ESA report.

A Notable Finding refers to environmental concerns that do not qualify as a REC, but have the potential to affect the Subject Properties. Notable Findings are also described in the conclusions section of the Phase I ESA report.

2.2 Scope of Services

The Phase I ESA was conducted in accordance with the United States Environmental Protection Agency (EPA) All-Appropriate Inquiry (AAI) rule (40 CFR, Part 312) as described in the American Society for Testing and Materials Standard E1527-13 (ASTM E1527-13), and modified as appropriate by ASTM E2247-08, “Phase I Environmental Site Assessment Process for Forestland or Rural Property.” The following activities were performed to accomplish the Phase I ESA objectives:

- **Site Reconnaissance** – Visual observations of readily accessible areas of the Subject Properties were conducted to identify RECs or Notable Findings. Access to the Subject Properties was limited by dense vegetation and topography. Within the MMR, access was also limited to roadways due to the potential for UXO in vegetated areas. For portions of the Subject Properties that could not visually or physically observed, observations were made to the extent practicable from the nearest vantage points and available aerial imagery, in accordance with ASTM E2247-08. Additionally, visual observations of adjoining properties were made from vantage points on the Subject Properties and public rights-of-way to assess the potential impact of these properties on the Subject Properties.
- **Interviews** – The Army’s Environmental Staff was queried about environmental conditions of the properties under Army control, and provided numerous environmental documents, as described elsewhere.
- **Regulatory Records Review** – A review of standard and additional regulatory records, using search distances established by ASTM E1527-13, was conducted and compiled by Environmental Data Resources, Inc. (EDR; Appendix A).
- **Historical Research** – Readily available sources of historical information related to the Subject Properties and adjoining properties were researched to identify historical land use practices that have the potential to adversely impact environmental conditions at the Subject Properties. Sources of historical information included historical aerial photographs and historical topographic maps. Due to the undeveloped and remote nature of the Subject Properties, relevant Sanborn Fire Insurance Maps and City Directories were not available.
- **Report Preparation** – This written summary of the findings and recommendations of the Phase I ESA was prepared.

2.3 Significant Assumptions

The independent conclusions presented in this report represent professional judgment based on review of reasonably ascertainable standard records and other standard sources of information. Conclusions were made with respect to our observations at readily visible and accessible areas of the Subject Properties, for conditions that existed at the time of the assessment, as limited by site reconnaissance conducted on-foot or from vehicle access viewpoints.

Information regarding operations, conditions, and previous investigations provided by the *User* of this report, by the Subject Properties' owners, or by any of those party's representatives, has been assumed to be correct and complete, except as noted in other sections of this report.

Historical records at five-year intervals stipulated by ASTM E 1527-13 were not readily available. The EDR inquiry provided United States Geological Survey (USGS) aerial photography for 1975, 1977, 1985, and 1992 (Appendix B). The 1992 aerial photograph shows dense cloud cover and, therefore, the most likely use from 1992 could not be interpreted. Google Earth imagery includes Tracts' aeriels from 2004, 2006, 2007, 2008, 2011, 2013, and 2014 and the topography and vegetation remains consistent through the years. United States Department of Agriculture (USDA) Geospatial Data Gateway provided aerial imagery for 2015. Review of the topographic maps provided by EDR Historical Topo Map Report included USGS Ka'ena 7.5' Quadrangle maps from 1954, 1964, 1998, and 2013. According to ASTM E1527-13, if the specific use of the property appears unchanged over a period longer than five years, then it is not required to research the use during that period. Based on the historical aerial photos and topographic maps, the property use appears unchanged during any 5-year periods that photos and maps were not available.

2.4 Limitations and Exceptions

ASTM guidance describes several “non-scope” environmental issues or conditions that the *User* may wish to assess in connection with commercial real estate that are outside the scope of this practice. These non-scope items include: asbestos-containing building materials, biological agents, cultural and historical resources, ecological resources, endangered species, health and safety, indoor air quality unrelated to releases of hazardous substances or petroleum products into the environment, industrial hygiene, lead-based paint, lead in drinking water, mold, radon, regulatory compliance, and wetlands (ASTM, 2013).

Some requirements for meeting AAI are strictly the responsibility of the *User* and beyond the scope of the Phase I ESA. These *User* requirements include providing the rationale for conducting the ESA at the Subject Properties; reviewing title and judicial evidence for Activity and Use Limitations (AULs) and environmental liens associated with the Subject Properties; providing any specialized, actual, and local knowledge of or experience with environmental conditions associated with the Subject Properties as would be material to RECs; and providing a written explanation for a significantly lower than fair market purchase price in transactions involving commercial real estate purchase where no associated RECs are yet identified (ASTM, 2013). Furthermore, parties who wish to qualify for one of the “Landowner Liability Protections” will need to know whether they are in compliance with AULs, including land use restrictions that were relied upon in connection with a response action. A determination of compliance with AULs is beyond the scope of this assessment (ASTM, 2013).

This ESA is site-specific in that it relates to assessment of environmental conditions on select tracts of commercial real estate (the Subject Properties), and is based on information that was reasonably ascertainable on dates and for locations indicated in this report. Consequently, it does not address additional issues raised in transactions such as purchases of business

entities, or interests therein, or of their assets, that may well involve environmental liabilities pertaining to properties previously owned or operated, or other off-site environmental liabilities.

This assessment is not intended to be a comprehensive inspection or assessment of all conditions that might exist at the Subject Properties. No ESA can absolutely rule out the existence of hazardous materials at a given site or wholly eliminate uncertainty regarding the potential for RECs associated with the Subject Properties. ESA standard practice is intended to reduce, but not eliminate, such uncertainty under conditions of reasonable limits of time and cost. Furthermore, completion of AAI does not imply an exhaustive assessment of clean Subject Properties, since the cost or time required to collect information must be balanced with the usefulness of such information and the orderly completion of a transaction.

This assessment is based upon limited research of “reasonably ascertainable/standard sources” about past and present use of the Subject Properties, and upon our observations of limited accessible areas of the Subject Properties. Existing hazardous materials and contaminants can escape detection using these methods, particularly in this case where dense vegetation and limited access prevent thorough site reconnaissance.

This report’s conclusions were based in part on information supplied by others, the accuracy or sufficiency of which could not be independently verified within the scope and budget of an ESA. No investigation can be thorough enough to exclude the presence of hazardous materials at a given Subject Property; therefore, if no hazardous materials are identified during an assessment, such a finding should not be construed as a guarantee of the absence of such materials on the Subject Properties, but rather the results of services performed within project scope, cost, and other limitations.

Any opinions presented apply to the Subject Properties’ conditions at the time of performance of services and do not address the potential for future releases. Changes in applicable environmental standards, practices, or regulations may occur following performance of services, which could impact the opinions presented.

2.5 User Reliance

This ESA of the Subject Properties was prepared for the sole use and benefit of the Army. ASTM guidance provides that the report may be used for Subject Properties’ transactions for up to one year after our assessment information was collected or updated, if specific ESA components (environmental lien records searches, regulatory records review, visual inspection of subject and adjoining properties, and declaration by the Environmental Professional responsible for the assessment or update) are updated no more than 180 days prior to such transactions. Any periodic ESA review should include an update of environmental conditions in the Subject Properties area.

Section 3: Subject Properties Description

This section provides information about the Subject Properties, such as ownership, general description, environmental setting, and current property usage, and describes the general uses of the adjoining properties and surrounding area.

3.1 Location and Legal Description

The Subject Properties are 38 miles northwest of Honolulu, located west of the Wai'anae Mountain Range in the western portion of O'ahu , Hawai'i (Figure 1).

The Subject Properties consist of multiple City and County of Honolulu tax parcels with a total area of approximately 782 acres. Legal addresses, ownership, and individual parcel area details are summarized from the City and County of Honolulu Land Information System (HoLIS) as shown in Table 2:

TABLE 2: PROPERTY LEGAL AND OWNERSHIP INFORMATION

Street Address	Tract	TMK	Tract Area (acres)	Current Owner(s)
Ka'ena Pt Road	1	8-1-01-07	716	State of Hawai'i
82-180 Farrington Highway	1	8-2-01-24		State of Hawai'i
81-601 Farrington Highway	2	8-1-01-08	60 acres	State of Hawai'i
Farrington Highway	2	8-2-01-22		State of Hawai'i
Farrington Highway	2	8-2-01-03		Mākua Protestant Church
Farrington Highway	2	8-2-01-01		State of Hawai'i
Farrington Highway	3	8-2-01-25	6	State of Hawai'i

EDR reported no deeds vesting title or environmental liens in the Subject Properties from the public record search of City and County of Honolulu from January 1, 1960 to May 28, 2016. EDR reported an easement recorded in April 2012 (Instrument Number A-44930891) for Tract 1 TMK 8-1-01-07 (EDR); a search of DLNR Bureau of Conveyances records indicated the easement to be for Hawaiian Telcom (DLNR, 2016).

Use of Mākua Valley by the US Army dates to the 1920s, when three parcels on the upper Mākua valley floor were purchased for howitzer emplacements (Army, 2009). After the December 1941 bombing of Pearl Harbor, the Army used its authority under martial law to take over the entire Mākua-Ka'ena Point area for security and training operations. In December 1942, the Army issued a real estate directive for 6,600 acres (2,671 hectares) of land at MMR that were already being used. Private parcels within that property were purchased from their

owners or obtained by condemnation, whereas territorial lands were conferred by the territorial governor's consent.

In May 1943 by Territorial Government of Hawai'i granted Revocable Permit No. 200 to the military for continued use of MMR. MMR has remained under Army control ever since. The site was used extensively for bombing and infantry training, but there are no historic records of ordnance expended on MMR (Army, 2009). After Hawai'i was granted statehood, the federal government exercised its option to set aside lands for its continued use. Most of MMR's 4,190 acres are ceded land owned by the federal government (3,236 acres) and land leased by the State of Hawai'i to the Army (782 acres; includes the Subject Properties). General lease No. S-3848 (U.S. Lease Contract No. DA-94-626-ENG-79, Appendix C) was entered into on August 17, 1964 between the State of Hawai'i and United States of America, whereby the U.S. Government obtained control and use of the State-owned land containing the Subject Properties for a period of 65 years, a period ending in the year 2029. Supplemental Agreement No. 1 (Appendix C) was signed on January 24, 1990 to withdraw a portion of the parcels agreed upon in the State General Lease No. S-3848 for the addition to the Kaena Point State Park.

3.2 Subject Properties and Vicinity General Characteristics

The Subject Properties are located approximately 38 miles northwest of Honolulu, within the western portion of the Island of O'ahu, Hawai'i. Land use in the vicinity of the Subject Properties includes State Conservation Land. Tracts 1 and 3 are situated within Mākua Valley below the Waianae Mountain Range. The Waianae Mountain Range forms the western part of the island and is 22 miles long with a maximum height of 4,025 feet above mean sea level at Mount Ka'ala. Vegetation within Tracts 1 and 3 varies with topography and elevation. It consists of predominantly perennial, non-native grass and leeward shrub land with artificial woodland occurring along the upper ridge. Dominant species include guinea grass (*Urochloa maxima*), haole koa (*Leucaena leucocephala*), kiawe (*Prosopis pallida*), and needle bush (*Vachellia farnesiana*) within the Mākua Military Reservation (Army, 2015a).

Tract 2 is situated west of Farrington Highway along the ocean. Tract 2 is characterized by relatively flat topography, ranging from sea level to slightly above sea level with beach, rocky areas, and shrubby vegetation.

The Subject Properties have been used as conservation land and for military training purposes, and land use does not appear to have not changed significantly in the past 50 years.

3.3 Current use of the Subject Properties

The Subject Properties are largely comprised of conservation land. The Army leases the Subject Properties to conduct military training. Tracts 1 and 3 are part of the current MMR.

Tracts 1 and 3 have limited access either geographically or because of strict security requirements. The Kuaokalā hiking trail, part of the Na Ala Hele Trail program administered by the DLNR Division of Forestry and Wildlife (DOFAW), runs along the northeast border of Tract 1 TMK 8-1-01-07 (Figure 2a). The Kuaokalā Trail requires a permit from DOFAW, and access is

via the Ka'ena Tracking Station at Yokohama. Access to Tract 1 is otherwise controlled by the MMR gate off Farrington Highway. Tract 3 is a smaller and remote piece of land that is only accessible through the MMR (Figure 2a).

Tract 2 has public access through State Park lands or dirt roads from Farrington Highway. The beach park area is used by recreational beachgoers. There also appear to be homeless persons living on Tract 2. The Mākua Protestant Church cemetery is situated within Tract 2. Tract 2 is also used for the Army's beach assault training activities.

3.4 Descriptions of Structures, Roads and Other Improvements

Two buildings are present on Tract 1 (TMK 8-1-01-07); one of the buildings is visible from Farrington Highway (Figure 2b). The larger structure is approximately 3,000 square feet (21°32'12.02"N, 158°13'47.11"W) and the second structure is approximately 100 square feet (21°32'13.66"N and 158°13'46.16"W); ownership signage was not observed. According to Range Control, the larger structure was used as a communications building and the smaller one located north of the communications building held an emergency generator. Army Environmental (Carrie Nelson, email communication, November 2016) reported that, although fuel storage tanks are often associated with emergency generators, she has no knowledge of tanks currently or formerly at the buildings. No underground storage tank at this location is listed in the State's database, but the presence or former presence of an above-ground storage tank is possible. Efforts to renovate the large building to use as a cultural and natural resource building were abandoned due to security requirements related to trespassers and vandals.

Tracts 1 and 3 have several roads, both paved and dirt, used for military training activity access. Tract 1 contained what appeared to be several wooden pop-up targets used for training. Tract 2 contains dirt roads (with gates) and trails. A cemetery operated by the Mākua Protestant Church is situated between one of the dirt roads and Farrington Highway (Figure 2b).

3.5 Current Uses of the Adjoining Properties

The preservation lands at the north, east and south borders of Tract 1 are rugged and difficult to access (Figure 2a); Kuaokalā Forest Reserve is to the north, Mokulē'ia Forest Reserve is to the east, Mākua Kea'au Forest Reserve is to the south; and Farrington Highway, the BATA, and Tract 2 are to the west. The forest reserve lands to the east of Tract 1 is within MMR and used for military training. Tract 3 is a small parcel that is within MMR; surrounding land use is military training.

Tract 2 runs north-south and is located between Tract 1 to the east and the Pacific Ocean to the west. The preservation lands at the north and south borders of Tract 2 are narrow beach land that may be accessed by the public from Farrington Highway.

Section 4: User Provided Information

The Army is responsible for communicating commonly known or reasonably ascertainable information that is material to RECs associated with the Subject Properties. A “User Questionnaire” was completed by the Army (Appendix E).

4.1 Title Records

A title search per se is not required to achieve AAI; however, ASTM specifies that standard practice calls for the User to conduct or contract title research to assess AULs and meet requirements for LLP (ASTM, 2013). The Army reported that they will conduct the title search closer to the potential real estate transaction.

4.2 Environmental Liens or Activity and Use Limitations

The Army reported that they know of no environmental liens associated with the Subject Properties. They reported that AULs associated with Tracts 1 and 3 are related to endangered species and UXO. EDR’s search of public records also did not indicate environmental liens or AULs associated with the Subject Properties.

4.3 Specialized Knowledge

The Army has no specialized knowledge or experience regarding environmental concerns associated with the Subject Properties.

4.4 Commonly Known or Reasonably Ascertainable Information

The Army reported live fire and conservation as commonly known or reasonably ascertainable environmental concerns associated with the Subject Properties.

4.5 Valuation Reduction for Environmental Issues

ASTM E1527-13 and 40 CFR 312.29 indicate that the User must identify and make a written record of an explanation for a significantly lower than fair market purchase price in transactions involving commercial real estate purchase or lease where no associated RECs are yet identified. The User shall consider the relationship of the purchase price of the property to the fair market value of the property if the property was not affected by hazardous substances or petroleum products. The Army has stated that the purchase price reasonably reflects the fair market value of the property.

4.6 Owner, Property Manager, and Occupant Information

The owner of the Subject Properties is the State of Hawaii. There are no permanent occupants on the Subject Properties and the lessee of the Makua Properties is the United States Army, except for TMK 8-2-01-03, owned by Mākua Protestant Church. No record of an Army lease for the church parcel (a cemetery) was reported.

4.7 Reason for Performing Phase I

This Phase I ESA was requested by the Army, a potential purchaser or continued Lessee of the Subject Properties.

4.8 Other Information

No other information was provided by the *User*.

Section 5: Records Review

5.1 Standard Environmental Record Sources

A review of federal, state, and tribal environmental databases related to the Subject Properties and surrounding area in accordance with the ASTM E1527-13 search radius was conducted to identify potential RECs. Properties that have or may have the potential for existing or future site contamination, environmental liabilities, or the potential for contamination migration were identified in this database search. Information from these various databases was compiled in the EDR Radius Map Report (EDR Report, Appendix A). Standard environmental records and respective search distances are listed in Table 3.

TABLE 3: STANDARD REGULATORY SOURCES AND SEARCH DISTANCES

Standard Environmental Record Sources		Minimum Search Distance	Found
Federal NPL Site List		1.0 mile	0
Federal Delisted NPL Site List		0.5 mile	0
Federal CERCLIS List		0.5 mile	0
Federal CERCLIS NFRAP List		0.5 mile	0
Federal RCRA CORRACTS Facilities List		1.0 mile	0
Federal RCRA Non-CORRACTS TSD Facilities List		0.5 mile	0
Federal RCRA Generators List		Subject & Adjoining Properties	0
Federal Institutional Control/Engineering Control Registries		Subject Properties	0
Federal ERNS List		Subject Properties	0
State and Tribal Hazardous Waste Sites for Investigation/Remediation	NPL-Equivalent	1.0 mile	0
	CERCLIS-Equivalent	0.5 mile	0
State/Tribal Landfill and/or Solid Waste Disposal Site Lists		0.5 mile	0
State/Tribal Leaking Storage Tanks Lists		0.5 mile	0
State/Tribal Registered Storage Tanks Lists		Subject & Adjoining Properties	0
State/Tribal Institutional Controls/Engineering Controls Registries		Subject Properties	0
State/Tribal Voluntary Cleanup Sites		0.5 mile	0
State/Tribal Brownfield Sites		0.5 mile	0

EDR's list of nineteen "Orphan" sites, i.e., sites for which EDR could not find addresses or mapping information, was reviewed (Appendix A). One orphan listing was found to be within Tract 1; this listing is related to listing MMR and describes several "written informal" notices of violation related to Resource Conservation and Recovery Act (RCRA) recordkeeping and other concerns. Review of reports provided by the Army revealed that the Army has conducted numerous environmental investigations of Army properties (the "cutouts" at the center of, but excluded from, Tract 1). These reports are further discussed in Section 5.3.2.

5.2 Environmental Records Review Findings

Federal National Priorities List (NPL) and Delisted NPL Site Lists

The NPL, also known as the Superfund list, is a subset of the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) that lists properties with the highest priority for cleanup under the EPA Hazard Ranking System (40 CFR Part 300). The list is compiled by the EPA pursuant to Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) 42 United States Code (USC) §9605 (a)(8)(B). No NPL sites were reported within one mile of the Subject Properties.

Federal CERCLIS and CERCLIS NFRAP Site List

The CERCLIS list is compiled by the EPA. It contains sites that the EPA has investigated or is currently investigating for potential hazardous substance contamination for possible inclusion on the NPL (ASTM, 2013). This list was renamed to Superfund Enterprise Management System (SEMS) by the EPA in 2015. The CERCLIS No Further Remedial Action Planned (NFRAP) database is for sites removed from CERCLIS/SEMS. These include sites for which, after initial investigation, no contamination was found, or where contamination was removed quickly enough or was not serious enough to warrant Federal Superfund action or NPL consideration (EDR, 2016). No CERCLIS/SEMS and CERCLIS NFRAP listed facilities were reported on or within one-half mile of the Subject Properties.

Federal RCRA Corrective Action Report (CORRACTS) Facilities List

The RCRA database, compiled by the EPA, lists those regulated facilities that have notified EPA as hazardous waste generators, transporters, or treatment, storage, or disposal facilities under RCRA, as summarized on the Resource Conservation and Recovery Information System (RCRIS). CORRACTS identifies hazardous waste handlers for which RCRA corrective action is documented. No listed CORRACTS facilities were reported on or within one mile of the Subject Properties.

Federal RCRA Non-CORRACTS TSD Facilities List

RCRIS non-CORRACTS Treatment, Storage, and Disposal (TSD) facilities are those facilities without documented corrective actions where treatment, storage, and/or disposal of hazardous wastes takes place, as defined and regulated by RCRA. No listed RCRA Non-CORRACTS TSD facilities were reported on or within one-half mile of the Subject Properties.

Federal RCRA Generators List

Hazardous waste “generators” are those facilities that produce hazardous waste as defined by RCRA. EDR reported no large or small-quantity generators on the Subject Properties or adjoining properties.

Federal Institutional and Engineering Controls Registries

The Federal Institutional Controls (ICs) Registry lists sites that have administrative measures (e.g., ground water use, construction, and property use restrictions) and post-remediation care requirements imposed to prevent exposure to residual contaminants on site. ICs typically

require deed restrictions for listed sites. The Engineering Controls (ECs) Registry lists facilities that have engineering controls in place, including various forms of caps, building foundations, liners, other treatment methods to eliminate pathways of migration for regulated substances to enter environmental media or to prevent affecting human health. EDR reported no IC facilities on the Subject Properties.

Federal ERNS List

The Emergency Response Notification System (ERNS) list is compiled by the EPA. The ERNS list compiles information on reported releases of oil and hazardous substances. EDR listed no such facilities located on the Subject Properties.

NPL-Equivalent and CERCLIS-Equivalent State Hazardous Waste Sites

The Hawaii equivalent to NPL consists of those sites on the planned cleanup priority list for which the State will provide funds. Other facility cleanups may be funded by potentially responsible parties. EDR looks for both types of facilities in Hawai'i Department of Health (HDOH) records searches (EDR, 2016). The HDOH office of Hazard Evaluation and Emergency Response (HEER) compiles the State Hazardous Waste Sites (SHWS) database, which includes facilities, sites, or areas in which the HDOH has an interest, has investigated, or may investigate under Hawaii Revised Statute (HRS) 128D, and includes CERCLIS sites. No SHWS facilities were reported on or within one-half mile of the Subject Properties.

State Landfill and/or Solid Waste Disposal Site Lists

The Hawaii Solid Waste Facilities List contains information pertaining to all permitted landfills located within the State of Hawaii. No permitted landfills were reported on or within one-half mile of the Subject Properties.

State Leaking Storage Tanks Lists

The State Department of Health Solid and Hazardous Waste Branch (SHWB) compiles a record of Leaking Underground Storage Tank inventoried incidents. No leaking tanks sites were reported by EDR or SHWB within one-half mile of the Subject Properties.

State Registered Storage Tank Lists

The UST database, compiled by SHWB, contains a list of registered UST owners and some details about facility UST contents, install dates, and current or past use information. No UST facilities were reported on the Subject Properties or adjoining properties.

State Institutional Control and Engineering Control Registries

State controls are essentially the same as Federal controls as described in the Federal Institutional Control and Engineering Control section. HDOH maintains a list of facilities with controls in place. HDOH also lists Voluntary Response Program (VRP) and Brownfields sites with controls in place. No listed facilities were reported on the Subject Properties.

State Voluntary Cleanup Sites

HDOH's VRP was established by statute in 1997 (Chapter 128D, Part II, HRS). The VRP encourages voluntary cleanup of contaminated properties by "streamlining" the cleanup process (EDR, 2016). No listed facilities were reported on or within one-half mile of the Subject Properties.

State Brownfield Sites

A Brownfield is real property for which future development or reuse may be hindered by existing or potential environmental contamination or hazardous substance issues. The EPA's Brownfields Program was developed so states, local communities, and other parties interested in economic viability can assess, safely clean up, and sustainably reuse brownfields. HDOH maintains a list of Brownfields sites. No listed sites were reported on or within one-half mile of the Subject Properties.

5.3 Additional Environmental Record Sources

5.3.1 EDR Additional Sources

EDR also reviewed the following additional reasonably ascertainable additional sources of environmental records that fall outside the requirements of the ASTM guidance (and, therefore, do not have recommended search distances). Records reviewed by EDR include:

State Records of Emergency Releases

HDOH HEER maintains a spreadsheet of reported spill incidents. EDR's search of this database indicated no reported releases for the Subject Properties. The HEER "Releases" and "Sites of Interest" databases were also searched for key words of "Mākua" and "MMR". No releases or sites of interest were reported that were likely to affect the Subject Properties.

FINDS

The Facility Index System (FINDS) contains both facility information and "pointers" to other sources of information that contain more detail. FINDS listings were not reported on or within one mile of the Subject Properties.

Drinking Water Quality Records

EDR reported five wells within the Subject Properties.

Other EDR Record Sources

EDR searched several other additional sources of regulatory information. The EDR for Subject Properties report indicated no reports related to Local Brownfield Lists, Local Lists of Landfill/Solid Waste Disposal Sites, and Local Lists of Hazardous Waste/Contaminated Sites. No listed facilities are located on or within one-half mile of the Subject Properties.

5.3.2 Environmental Reports Provided by the Army

The Army provided numerous reports that document environmental investigations at the MMR. The investigations focus on munitions and explosives of concern (MEC) and/or munitions

constituents (MC). A 2003 Surface UXO Clearance at MMR is described as a clearance sweep conducted in phases over several portions of the operational range area of Mākua, discovering more than 500 pieces of UXO, as well as over 10,000 inert ordnance and explosive waste items (Army, 2007). Other reports document cultural and natural resource investigations at the MMR (Army, 2009).

Because the MMR remains an active operational range, there appears to have been little investigation of the areas that comprise Tracts 1 and 3. Most environmental reports provided document investigation of the Mākua Training Area (MTA) (TD) site, a transferred area outside the operations range boundary (Army, 2007; note: “TD” is not defined in the report, but is used as part of the site name).

A 2007 Historical Records Review (Army, 2007) reported that two sites at MMR had been identified as eligible for action under the Military Munitions Response Program (MMRP). MMRP eligible sites include other than operational ranges where UXO, discarded military munitions, and MC are known or suspected and the release occurred prior to September 2002. The first site was the MTA, situated immediately east of Farrington Highway on property predominantly owned by the Army immediately inside the MMR gate (Appendix B). The site comprises 22 acres and was used for training activities from the 1930s to 1985 when the Range Office was constructed within the site. A 1950 UXO clearance exercise removed rockets, mortar shells, live small arms ammunitions, a variety of high explosive shells, and hand grenades. The site was re-classified as an operational range and, therefore, was not eligible for the MMRP.

The second site discussed in the Review was the MTA (TD), which consists of two distinct land areas – a northern area immediately north of the MMR (and immediately north of Tract 1) and the beach area west of MMR and Farrington Highway (including Tract 2) (Army, 2007; see map in Appendix B). The MTA (TD) was used for general training purposes from the 1940s until 1990. Training activities included naval aerial bombing, shelling from offshore battleships, and amphibious assaults on Mākua Beach. Training activities for small arms and artillery firing, helicopter gunnery practice and maneuvers, tactical live-fire training exercises, and ground training of troops in simulated war activities have also occurred (Army, 2007). The document includes a description of MEC likely to be associated with the site, as well as a list of potential MCs. Both the northern and beach areas were also part of the 1950 clearance activities. In 1998, several UXO (including a 1,000-pound bomb) were found during archaeological surveys of a heiau immediately south the MTA (TD) northern area (and likely within Tract 1).

The BATA was designated as a separate MMRP site on property owned by the Army (Army, 2007). Activities conducted at this site were the same, and occurred at the same time, as those conducted at the MTA (TD). The beach area west of the BATA remained part of the MTA (TD), and is included in Tract 2. In May 2003, the Army investigated three ponds in the beach area to test for possible contamination of sediments from MC (see locations in Appendix B). The investigation found concentrations of metals within background concentration ranges, and concentrations of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and herbicides in some samples at concentrations below EPA Region IX soil

Preliminary Remediation Goals (Army, 2007). Trace concentrations of two dioxin compounds were also reported.

A comprehensive sampling study was completed in 2011 (Shaw, 2011) of the MTA (TD) and BATA areas (see maps in Appendix B). The investigation included visual and geophysical transects, and sampling for MCs such as nitrobenzene, and metals. Based on the results of their study, Shaw recommended splitting the MTA (TD) into several munitions response sites (MRSs).

The “MTA Beach 5” area contains the northern end of Tract 2 (Appendix B). The results of the risk assessment indicate that MC does not pose a hazard to human health or ecological receptors at the MTA Beach 5 area. Shaw recommended preparing a No Further Action Proposed Plan for public review and comment and then issuing a decision document for the MTA Beach 5 area.

The remainder of Tract 2 was labeled by Shaw as the “MTA South Sector” (see maps in Appendix B), and continuation of the CERCLA process was recommended (Shaw, 2011). A December 2013 report (EA, 2013) documented an investigation conducted to develop a Conceptual Site Model (CSM) and establish if there was a potential interaction between MMR’s on-range sources of MEC and off-range receptors (Appendix B). The study assessed surface water pathways that could carry contaminants from operational range areas, and determined that concentrations of MEC were not migrating off-range at concentrations that pose an unacceptable risk to human health or the environment (EA, 2013).

A May 2015 Final Decision Document (Army, 2015a) for the Beach South MRS (part of Tract 2) as well as the MTA (TD) Plateau site) found no basis for additional action, and recommended No Further Action (NFA). The report is based on geophysical coverage from the previous investigations, and stated a 98.88% confidence that there is less than or equal to 0.5 UXO items per acre at the Beach South MRS. The baseline risk assessment results indicated that no potentially unacceptable risks to human health or the environment were identified. Consequently, the Army concluded that no further action is necessary to protect public health, safety, or the environment from actual or threatened releases of hazardous substances in site media into the environment (Army, 2015a).

The Army also conducted Marine Resources Studies in 2009 and 2015 to evaluate whether constituents potentially associated with military training at MMR are present in samples of selected species of seaweed, octopus, and sea cucumber found near Mākua Beach and relied on for subsistence by area residents (Army, 2015b). Organochlorine pesticides heptachlor and heptachlor epoxide were found in seven limu kohu (seaweed) samples collected from Mākua during the dry season sampling event. These two compounds have been widely used in Hawai‘i by pest control operators, lawn and garden services, pineapple growers, and homeowners for the control of termites and other pests. The use of these compounds was discontinued in 1988 when their commercial sale was banned (USGS, 1998; USEPA, 2006), but the State of Hawai‘i Department of Health (HDOH) has acknowledged that soil contaminated with heptachlor and heptachlor epoxide is highly likely to be present in areas where these pesticides were

historically applied (HDOH, 2014). The Army concluded that compliance with the sustainable range program and adherence to long-term water quality monitoring program will minimize or prevent the introduction of trace amounts of heptachlor compounds that may be present in the soils at MMR to marine resources at Mākua Beach, and that MMR training activities are not anticipated to pose an increased risk to human health for residents who rely on marine resources for subsistence (Army, 2015b).

5.4 Physical Setting Record Sources

The objective of reviewing physical setting records is to assess the potential for contaminant migration that may affect the Subject Properties. Review of a current U.S. Geological Survey (USGS) 7.5-minute topographic map (or equivalent) is the only required standard source for evaluating the physical setting of the Subject Properties; however, additional sources may be used to provide additional information on physical setting per the environmental professional discretion (ASTM, 2013). Discretionary physical setting sources shall be sought when (1) conditions have been identified in which hazardous substances or petroleum products are likely to migrate to the property or from or within the property into the groundwater or soil and (2) more information than is provided in the current USGS 7.5 Minute Topographic Map (or equivalent) is generally obtained, pursuant to local good commercial and customary practice in initial environmental site assessments in the type of commercial real estate transaction involved, in order to assess the impact of such migration on recognized environmental conditions in connection with the property.

5.4.1 Current USGS 7.5-Minute Topographic Map

Topographic map coverage of the Subject Property vicinity is provided by the USGS Ka'ena Quadrangle, at a scale of 1:24,000.

5.4.2 Geology/Soils

O'ahu was formed by two volcanoes: the Wai'anae range on the west and the younger Ko'olau range on the east. The Ko'olau range is a narrow long ridge about 37 miles long and deeply eroded by streams. It consists of entirely thin, narrow, basaltic lava flows piled one upon another like shingles, with minor amounts of volcanic ash and numerous dikes (Stearns, 1985). Lava flows from the Ko'olau volcano banked against the already eroded slope of Wai'anae volcano to form the gently sloping surface of the Schofield Plateau (MacDonald, 1983). The Mākua study area comprises recreational areas along the coast and preservation areas on the west slopes of the Wai'anae range.

Subject property soils primarily consist of rock and stony land (77.7 percent) and cobbly/stony clay loam soils (12.2 percent) (Foote et al, 1972). The rock lands comprise of Rock outcrop (28.4 percent), Rock land (27.4 percent) and Stony land (21.9 percent). The soils comprise of Lualualei extremely cobbly clay (6.3 percent), Pulehu very stony clay loam (3 percent) and Mamala cobbly silty clay loam (2.9 percent). Tract 2 soils are predominantly classified as "Beaches" soils, comprising 4.6% of the total Subject Property soils.

The parent material for the Rock land is basalt, and consists of 40 to 10 inches to restrictive features. The Rock land is well drained with more than 80 inches' depth to water table. The Stony land is 100 percent mass movement deposits with slopes of 5 to 40 percent. The mean annual precipitation is about 18 to 60 inches, and the mean annual temperature is about 72 to 75 degrees F. The Stony land is well drained with more than 80 inches depth to restrictive features and water table.

The Lualualei soils are on alluvial fans and talus slopes at elevations of 10 to 120 feet. Slopes range from 0 to 35 percent. The nonstony types are normally on gently sloping areas whereas the stony types are near drainages or on talus slopes. The Lualualei extremely cobbly clays are deep, well drained soils that formed in alluvium. The depth to restrictive features and water table is more than 80 inches.

The Pulehu very stony clay loams are on alluvial fans and flood plains along drainageways at elevations ranging from sea level to 300 feet. The Pulehu very stony clay loams are well drained soil and have slopes of 0 to 12 percent. The Pulehu very stony clay loams are well drained with more than 80 inches depth to restrictive features and water table.

The Mamala cobbly silty clay loams are on coastal plains at elevations of sea level to 100 feet. Slope is 0 to 12 percent. The Mamala cobbly silty clay loams are well drained soils formed in shallow alluvium deposited over coral. The underlying coral is relatively level but has a karst surface. Outcrops of coral are common. The depth lithic bedrock is 8 to 20 inches and the depth to the water table is more than 80 inches.

5.4.3 Hydrology and Hydrogeology

According to "Aquifer Identification and Classification for the Island of O'ahu" (Mink and Lau, 1990), the Subject properties are located over the three aquifers (codes 30305112, 30305212, and 30305116) in the Kea'au aquifer system in Wai'anae.

The groundwater of the three underlying aquifers is: unconfined basal aquifers segmented into compartments by dikes (30305112), unconfined high level aquifers segmented into compartments by dikes (30305212) and unconfined basal sedimentary aquifers comprised of alluvial and marine sediments (30305116).

Two of the aquifers (30305112 and 30305212) have potential use to supply drinking water and are irreplaceable sources with high vulnerability to contamination. Aquifer 30305212 is a low salinity aquifer with chloride content between 250mg/l and 1,000mg/l. The third aquifer (30305116) has no potential use as a drinking water source due to its high salinity (chloride content between 5,000mg/l and 15,000mg/l), and is characterized as not ecologically important (Mink and Lau, 1990).

EDR reported no public water wells within one mile of the Subject Properties. They reported five wells (EDR Well Listings 3, 4, 6, 7, and 14) listed with USGS within the Subject Properties (Appendix A). The wells were not observed in the field. Wells 3 and 4 may have been used for irrigation; wells 6, 7 and 14 are indicated by EDR to be owned by the Pacific Islands Water

Science Center (USGS) and may be used to monitor the aquifer in Mākua Valley. Due to their proximity to the shoreline, these wells likely have high salinity.

5.5 Historical Record Sources

The objective of historical research is to determine previous uses of the Subject Properties and surrounding area to identify historical RECs associated with the Subject Properties. To achieve this objective, ASTM E1527-13 dictates documentation of obvious uses of the Subject Properties' first developed use (including agricultural activity or placement of fill), or back to 1940 (whichever is earlier), to the present, under condition that the records are reasonably ascertainable and likely to be useful for AAI (ASTM, 2013). Review of standard historical sources at less than approximately five year intervals is not required by this practice. If the specific use of the property appears unchanged over a period longer than five years, then it is not required by this practice to research the use during that period.

5.5.1 Sources of Historical Information

Table 4 lists the types of historical records that are considered standard or additional sources, and indicates which records were used for the research in this report. Readily available historical topographic maps and aerial photographs were obtained from EDR. Copies of these documents are included in Appendix C; Table 4 below summarizes information from each source pertinent to the Subject Properties. Due to the undeveloped nature of the property, Sanborn Fire Insurance maps were not included in the EDR database request.

TABLE 4: HISTORICAL SOURCES

Historical Record Sources	Date(s)	Use and Comments
Standard Sources		
Aerial Photographs	EDR: 1975, 1977, 1985, and 1992; Google Earth 2004 2006, 2007, 2008, 2011, 2013, 2014, and USDA 2015	Yes: Available records indicate no changes in subject property use.
Property Tax Files	--	Yes: City and County of Honolulu HoLIS ownership, property details Tract 1, TMK 8-1-01-07: 4/20/12 grant of easement
Recorded Land Title Records	--	No: Not provided by User.
USGS Topographic Maps	1954, 1964, 1998, and 2013	Yes; however, maps indicate no changes in subject property use
Local Street Directories	--	No: No City Streets on the Subject Properties
Zoning/Land Use Records	Various Dates State of Hawai'i Office of Planning GIS layers	Yes: utilized for land cover and land use classifications

Historical Record Sources	Date(s)	Use and Comments
Additional Historic Sources		
Other Maps (Street, Tax Map, etc.)	--	No: No relevant reports documented
Internet Reports, News Items, and other Documents	Various Dates	Yes; internet searches yielded information on military land use and the public concerns regarding military activities within MMR.
Previous Environmental Report(s)	Various Dates	Yes, see Section 5.3.2 for summary of environmental investigations in or near the Mākua Properties.

5.5.2 Site and Vicinity History

Prior to the Army's use of Mākua Valley, cattle ranching was a predominant land use in the Valley, and had usurped Hawaiian residential use by the early 1900s (Kelly and Aleck, 1997). There is no indication the Valley was used for commercial crop production.

Tracts 1 and 3

In January 1929, under Territorial Executive Order No. 351, 8.84 acres of the Mākua Valley were acquired by the Army in Mākua Valley (Weston, 2013). On June 2, 1931, by Decree of the U.S. District Court for the Territory of Hawaii, 5.95 acres of property belonging to McCandless Ranch were purchased for \$140.00. Shortly after the bombing of Pearl Harbor on December 7, 1941, the Army took control of the entire Mākua-Ka'ena Point area for military security and training purposes. On May 17, 1943, the Territorial Government granted a revocable permit (Revocable Permit 200) for the military use of this land for the duration of World War II and six months thereafter. This parcel consisted of 3,273 acres that comprises the current MMR installation boundary and land leading up the Waianae Mountain Range (Army, 2015a).

After 1943, the Valley began to be used extensively for joint Army-Navy maneuvers, with Navy planes and battleships bombing and shelling the valley. Structures in the Valley were used for target practice (Kelly and Aleck, 1997). In 1964, Executive Order No. 11166 was signed by President Lyndon B. Johnson, reserving the interior portion (in fee simple form) of the valleys as the MMR (Weston, 2013). The site was used extensively for bombing and infantry training, but there are no historic records of ordnance expended on MMR. Military munitions use has not occurred on the installation since 2004 (Army, 2009).

Tract 2

On October 1, 1943, Mākua Beach was officially set aside for joint Army-Navy use. The beach at Mākua was intended for amphibious assault training; however, the beach had to be cleared of large rocks and coral debris before it could be used for training purposes. Mākua beach was cleared in early 1943 and underwater demolition teams cleared pockets of large beach rock. According to a World War II History Report, no live fire took place while conducting landing training on Mākua Beach (Army, 2007).

5.5.3 Site Historical Concerns

The only identified historical land use, since the mid-1940s, on Tracts 1 and 3 is related to military use, with exception of the Kuaokalā Trail (hiking) along the north border of Tract 1. Tract 2 has also experienced military use, as an amphibious landing site (Kelly and Aleck, 1997). Given the reported bombing and shelling of Mākua Valley as target practice since the 1940s, the occurrence of UXO on Tracts 1 and 3 is a concern.

In addition, environmental documents provided by the Army also document occasional small arms ammunition and ordnance on Tract 2. Tract 2 has also been investigated, and is currently undergoing investigation, for soil contamination by ordnance constituents such as nitrobenzene, and metals. A study of sediment and marine organisms found the presence of organochlorine pesticides (see Section 5.3.2). A cemetery on Tract 2 is reportedly owned by Mākua Protestant Church.

Section 6: Subject Properties Reconnaissance

6.1 Methodology and Limiting Conditions

The Subject Properties reconnaissance was conducted on March 31st and May 6th by [REDACTED] and UXO Specialist [REDACTED] of Zapata Incorporated.

March 31st the weather was 79 degrees, partly cloudy, with no precipitation during the site reconnaissance. May 6th the weather was 85 degrees, cloudy, with no precipitation during the site reconnaissance. Site reconnaissance was limited to dirt roads within Mākua Military Reservation (Tracts 1 and 3) and off-road paths for Tract 2. Photographs obtained during the site reconnaissance are included in the attached Appendix D.

6.2 General Site Setting

6.2.1 Current Use(s) of the Subject Property

Tracts 1 and 3 have been under US Army control since May 1943 and have a property tax class of preservation; however, both tracts are part of the active MMR. Tract 2 is largely comprised of preservation area and is used primarily for recreation with scheduled military activities. The Subject Properties were viewed, to the extent practical (ASTM E2247-08), to identify current uses likely to involve the use, treatment, storage, disposal, or generation of hazardous substances or petroleum products. Observations noted during the reconnaissance are summarized in Table 5.

6.2.2 Indications of Past Use(s) of the Subject Property

The reconnaissance did not provide indications of past uses that were likely to have involved the use, treatment, storage, disposal, or generation of hazardous substances or petroleum products, as summarized in Table 5. Tract 2 had scattered litter observed near some of the beach recreational areas and potential areas utilized for fugitive dumping.

6.2.3 Current Use(s) and Indications of Past Use(s) of Adjoining Properties

Adjoining properties were observed to be heavily vegetated and unused, with no indications of past use(s) observed.

6.3 Exterior and Interior Observations

The site reconnaissance team did not access two buildings on the subject property. Exterior observations are noted in Table 5.

TABLE 5: SUMMARY OF RECONNAISSANCE OBSERVATIONS

Reconnaissance Subject	Comments	REC? (Y/N)
Current Use(s) of the Subject Property		
Current use	Tracts 1 and 3: Military training Tract 2: Preservation, public access and recreation, scheduled military training	N
Vacant spaces / undeveloped areas	Subject Properties: Entire tracts are undeveloped with exception of the dirt roads within MMR for military use and beach access roads for public use of Tract 2. Tracts 1 and 3 are enclosed by fencing that restricts public access.	N
Property improvements	Subject Properties: Dirt roads. Tract 1: Fencing for ungulate control as part of natural resources conservation efforts. Target practice stands in various areas. Tract 2: Cemetery	N
Structures	Tract 1: Two structures within fenced area east of Farrington Highway. Reported by the Army to be a former communication building and emergency generator building. Tracts 2 and 3: None, except for makeshift monuments on Tract 2.	N
Roads and parking areas	Dirt roads through Tract 1 and 3 as part of MMR. Incidental side roads off of Farrington Highway for Tract 2 public beach access.	N
Potable water supply	None within the Properties.	N
Wells (<i>dry, irrigation, injection, abandoned, water, industrial</i>)	No evidence of wells was observed on the Subject Properties during the site visits.	N
Sewage disposal system	Subject Properties: No evidence of cesspools or on-site wastewater systems was observed.	N
Surface water drainage	Subject Properties: Natural drainageways are present. No drainage structures or drainage issues were observed.	N
Heating/cooling systems	Subject Properties: N/A.	N
Landscaping (<i>potential pesticide use</i>)	Subject Properties: N/A (natural area)	N
Electrical transformers (PCBs)	Subject Properties: No transformers or other potential sources of PCBs were observed.	N
Containers / Containment		
Aboveground storage tanks	Subject Properties: None observed.	N
Underground storage tanks	Subject Properties: No indications of USTs were observed.	N

Reconnaissance Subject	Comments	REC? (Y/N)
Hazardous chemicals (Storage, Use, Disposal)	Subject Properties: No evidence of a hazardous substance release.	N
Petroleum hydrocarbons	Tracts 1 and 3: No evidence of petroleum hydrocarbons. Tract 2: Empty 57-gallon diesel tank observed at South end of the tract, along with another container that was likely a vehicle fuel tank. See Figure 3a, 3b with locations of tire piles, 1 abandoned rusted vehicle, and 57-gallon diesel tank.	N
Pesticide usage or storage	Subject Properties: None observed during site reconnaissance.	N
Solid or hazardous waste storage	Tracts 1 and 3: None observed. Tract 2: Tract 2 had significant fugitive dumping, with debris/litter observed throughout. Trash items include electronics, wood pallets, carpet, concrete bricks, scrap metal, and mattress waste. No evidence of stressed vegetation or staining related to hazardous substance releases.	N
Unidentified substances	Subject Properties: Containers of unidentified substances were not observed.	N
Septic tanks	Subject Properties: No evidence of septic or cesspool systems was observed.	N
Berms (potential secondary containment)	Subject Properties: None observed.	N
Potential Waste Disposal		
Industrial wastewater	Subject Properties: None observed.	N
Pits, ponds, lagoons	Subject Properties: None observed.	N
Pools of liquid	Subject Properties: None observed.	N
Floor drains	Subject Properties: None observed.	N
Storm drainage system	Subject Properties: None observed.	N
Dumping or filling (soil or debris)	Tracts 1 and 3: None observed. Tract 2: Tract 2 had significant fugitive dumping, with debris/litter observed throughout. This is likely a dynamic situation; the State conducts cleanups in this area, and other materials are likely to be dumped. One soil pile was observed within concrete debris (Figure 3b).	N
Roads and Trails with No Apparent Purpose (potential for illicit dumping)	Tracts 1 and 3: Dirt roads are within MMR; no potential for illicit dumping. Tract 2: Dirt roads were traveled and debris/litter locations recorded.	N

Reconnaissance Subject	Comments	REC? (Y/N)
Potential Evidence for Chemical Impacts		
Materials Spills	Tract 1 and 3: None observed. Tract 2: Illegal dumping activities may have resulted in historical releases, but no evidence of releases was observed.	N
Stained or corroded pavement, flooring, or walls	Subject Properties: N/A	N
Odors	Subject Properties: None detected	N
Air emissions	Subject Properties: None observed	N
Stained or disturbed soil	Tracts 1 and 3: No stained or disturbed soil observed. Tract 2: Discoloration of soil was observed around rusted car and in areas of burned trash.	N
Stressed vegetation	Subject Properties: None observed.	N
Non ASTM items & Miscellaneous		
Asbestos-containing building materials	Subject Properties: No suspect asbestos-containing materials were observed; however, the 2 buildings on Tract 1 were not surveyed for asbestos and, since they appear to have been in place in a 1975 aerial map, they may contain asbestos-containing materials.	N
Lead-based paint	Subject Properties: None observed; however, the 2 buildings on Tract 1 were not surveyed for lead paint and, since they appear to have been in place in a 1975 aerial map, they may contain lead paint.	N
Interior water damage / mold	Subject Properties: None observed; however, the 2 buildings on Tract 1 were not surveyed for mold.	N
Fluorescent lighting	Subject Properties: None observed, although the buildings on Tract 1 may contain fluorescent lighting.	N
High voltage power lines/cellular phone towers	Subject Properties: None observed.	N
Other	Tract 2: March 2016 reconnaissance effort encountered a team of UXO specialists surveying in the BATA between Farrington Highway and Tract 2. Signage prohibiting access and warning cones were observed as well as a safety traffic crew on Farrington Highway.	N
Site recon indications of previous use that may have had an environmental impact		
Concrete pads	Subject Properties: None observed.	N
Pump islands	Subject Properties: None observed.	N
Fill ports or vent pipes	Subject Properties: None observed.	N

Reconnaissance Subject	Comments	REC? (Y/N)
Former building foundations	Subject Properties: None observed.	N
Abandoned drums/containers	Subject Properties: None observed.	N
Sumps and clarifiers	Subject Properties: None observed.	N
Hoists or lifts	Subject Properties: None observed.	N
Concrete / asphalt patches	Subject Properties: None observed.	N
Monitoring Wells	Subject Properties: None observed.	N
Other	Subject Properties have been subject to numerous environmental studies summarized in Appendix B.	N
Indication of Adjoining Property Concerns		
Adjoining property use that may provide environmental concern	Subject Properties: None observed.	N
Monitoring wells on adjoining property	Subject Properties: None observed.	N
Odors emanating from adjoining property	Subject Properties: None noted.	N
Contaminated runoff from adjoining property	Subject Properties: None observed.	N
Other	Subject Properties: None.	N

Section 7: Interviews

7.1 Interviews with Owners

Interviews with the project owners (State of Hawai'i and Mākua Protestant Church) were not conducted, as the significant land use is controlled by the Army.

7.2 Interviews with Site Managers

The Army's Environmental Staff (██████████) was queried about environmental condition of the properties, and provided numerous environmental documents, as described in Section 5.

7.3 Interviews with Occupants

There are no permanent occupants on the Subject Properties. Tracts 1 and 3 are periodically used for Army training. Tract 2 is intermittently occupied by homeless persons and occasionally used for Army training.

7.4 Interviews with Local Government Officials

Local government official interviews were not conducted, but DLNR press releases regarding issues with fugitive dumping at Tract 2 were reviewed.

7.5 Interviews with Others

No additional interviews were conducted.

Section 8: Findings and Opinion

A Phase I ESA has been conducted in conformance with the scope and limitations of ASTM E2247-08 and E1527-13 of the Subject Properties, located at the Mākua Properties.

All three Mākua Tracts have been identified as areas that have been subject to past bombing, shelling, and small arms fire over a period of many years. Past UXO sweeps have collected tons of ordnance material, and additional UXO is occasionally encountered within the MMR operational areas (Tracts 1 and 3). The likely presence of additional UXO is characterized as a REC given the physical hazard of UXO as well as the possibility that human health and the environment could be exposed to hazardous substances used in munitions.

Tract 2 has been largely investigated and cleared of UXO, although occasional reports of UXO found by the public still occur. Soil sampling on Tract 2 has identified munitions constituents, but not at concentrations of concern, and various studies recommended no further action. Therefore, the UXO on Tract 2 is identified as an HREC.

The assessment revealed the following notable findings that could indicate additional environmental concerns on Tract 2 (but for which no release was observed or is documented):

- Solid (e.g., general refuse) and potentially hazardous wastes (e.g., discarded electronics) were observed dumped in vegetated areas throughout Tract 2. The degree of deterioration of some trash items observed indicate illegal dumping is a long-standing issue. At the time of the field survey, an empty 57-gallon diesel tank was observed at South end of Tract 2, and numerous tire piles were observed. The abandonment of these items do not pose a REC to Tract 2 as no releases of hazardous substances or petroleum have been documented. This is likely a dynamic situation, as the State conducts clean-up events, and other materials are likely to be dumped.
- A cemetery on the property currently owned by the Mākua Protestant Church.

Section 9: Conclusions

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM E2247-08 and E1527-13 standards of the Subject Properties. Any exceptions to, or deletions from, this practice are described in this report.

This assessment has revealed the high likelihood of UXO as a REC associated with Tracts 1 and 3; however, specific locations of potential UXO were not identified. Tract 2 has been subject to UXO removal action, and the site investigated for MECs. Several studies have recommended no further action. Tract 2 is characterized as a HREC.

No additional investigation or sampling of the Subject Properties is recommended as part of this Environmental Condition of Property (ECoP) study. The Army has conducted several studies in Mākua related to munitions constituents, and have determined that MECs associated with MMR source areas are not expected to migrate off-range at levels that pose an unacceptable risk to human or ecological receptors (EA, 2013). The Army conducts periodic reviews under the Operational Range Assessment Program and evaluates whether changed conditions may prompt a sampling effort.

Section 10: Deviations & Data Gaps

No deviations from the ASTM E2247-08 and E1527-13 standards were made during the preparation of the Phase I ESA portion of this report, except as described in Section 2.4. Significant data gaps were not identified during this assessment.

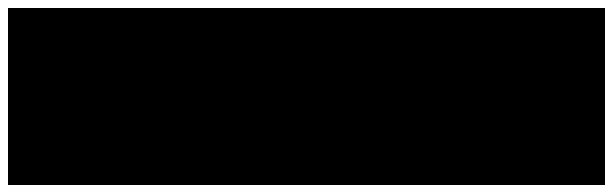
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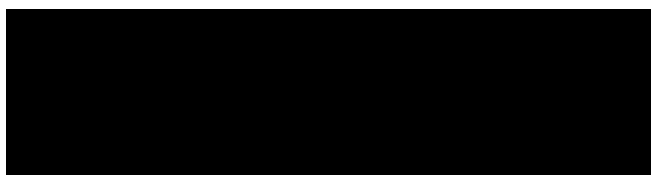
Section 12: Signatures of Environmental Professionals

The undersigned environmental professionals have performed a Phase I Environmental Site Assessment of the properties designated as Mākua Tract 1 (TMKs 8-1-01-07 & 8-2-01-24), Tract 2 (TMKs 8-1-01-08, 8-2-01-22, 8-2-01-03, and 8-2-01-01), and Tract 3 (TMK 8-2-01-25) (Subject Properties), in general conformance with the scope and limitations stated earlier in this report. By signing below, the environmental professionals declare that, to the best of their professional knowledge and belief, the undersigned meet the definition of an *Environmental Professional* as defined in §312.10 of 40 CFR 312 and have the specific qualifications based on education, training, and experience to assess a *property* of the nature, history, and setting of the Subject Properties. The undersigned have performed this investigation in conformance with the “all appropriate inquiry” standards and practices set forth in 40 CFR Part 312.



Date: 03/30/2017

Senior Geologist, Masa Fujioka & Associates



Date: 03/20/2017

Principal, Hart Crowser, Inc.

Section 13: Qualifications of Environmental Professionals

Qualifications required of an Environmental Professional to assess a property are defined in the EPA's AAI Rule (40 CFR 312.10, 2005). An Environmental Professional is defined as:

A person who possesses sufficient specific education, training, and experience necessary to exercise professional judgment to develop opinions and conclusions regarding conditions indicative of releases or threatened releases (see 40 CFR Part 312.1(c)) on, at, in, or to a property, sufficient to meet the objectives and performance factors in 40 CFR Parts 312.20(e) and (f).

Such a person must:

- *Hold a current Professional Engineer's or Professional Geologist's license or registration from a State, Tribe, or US territory (or the Commonwealth of Puerto Rico) and have the equivalent of three (3) years of full-time relevant experience; or*
- *Be licensed or certified by the Federal Government, a State, Tribe, or US territory (or the Commonwealth of Puerto Rico) to perform environmental inquiries as defined in 40 CFR Part 312.21 and have the equivalent of three (3) years of full-time relevant experience; or*
- *Have a Baccalaureate or higher degree from an accredited institution of higher education in a discipline of engineering or science and the equivalent of five (5) years of full-time relevant experience; or*
- *Have the equivalent of ten (10) years of full-time relevant experience.*

The qualifications of the Environmental Professionals who meet these requirements and who prepared this report are contained on the following pages.

Statement of Qualifications

TITLE

Senior Geologist

EXPERTISE

is a Senior Geologist with Masa Fujioka & Associates (MFA). She has 25 years of experience as a Geologist in Hawai'i. Her expertise includes Phase I and Phase II Environmental Site Assessments, Geologic Investigations, Hydrogeologic Investigations, Soil and Groundwater Remediation, Geotechnical Inspections and Field Mapping.

**ACADEMIC
BACKGROUND**

B. S., Geology and Geophysics, 1990
University of Hawaii, Manoa

EXPERIENCE

has performed numerous Phase I Environmental Site Assessments, including historical record searches, site reconnaissance, interviews and report preparation. Performed Phase II Environmental Site Assessments including report preparation, multi-incremental soil sampling, supervision of drilling and installation of groundwater monitoring, air monitoring and injection wells; well logging and soil classification.

Project Manager on multiple environmental consultation projects including subsurface investigations, remedial investigations, and feasibility/ treatability studies for petroleum releases from leaking USTs and other releases. Prepared regulatory reports including data analyses and recommendations.

Project Manager for multiple hydrogeologic investigations involving groundwater supply and transport problems. Performed well design, permitting and supervision for installation of drinking water, salt water, monitoring and injection wells. Performed and documented well development, pump tests, injection tests, and slug tests for determination of hydraulic conditions and aquifer characteristics including compliance with Regulatory permitting and reporting.

Extensive experience in conducting and supervising field mapping and environmental sampling (soil, groundwater, surface water, deep well tunnels, soil vapor, air, and waste) for laboratory analyses and for environmental assessment and delineation of subsurface conditions. Field and technical experience includes landfill gases and landfill gas extraction systems.

PAST EXPERIENCE

*Masa Fujioka & Associates, August 1991 with continued consulting projects to present.
C&R Groundwater Services, August 2000 to September 2009, Principal
J. Romano Consulting, September 2009 to October 2016*

OTHER TRAINING

40-hour Hazardous Materials/Waste Health and Safety Training since 1991 and Supervisor 8-hour Hazardous Materials/Waste Health and Safety Training since 2003.

AFFILIATIONS:

American Institute of Professional Geologists (AIPG)

HISTORY OF PROJECTS ON-GOING AND COMPLETED

Partial List

Hawai'i County Dept. of Environmental Management, Hilo Hawaii

Project Manager for groundwater monitoring and aquifer transport at Hilo Landfill. Supervision of drilling and installation of monitoring wells and pump testing. Conducted quarterly groundwater and soil gas monitoring at West Hawaii and Hilo Solid Waste Landfills. Ongoing

Hawai'i County Dept. of Environmental Management, Hilo Hawaii

Supervised and conducted subsurface air monitoring, field inspections, fire remediation, including installation, design and monitoring requirements for remediation CO₂/water injection system. Geologic, environmental mapping and reporting, Kailua-Kona Closed Landfill, Hawaii. Ongoing

Damien Estates Kahuku Ranch, Ocean View, Hawaii

Phase II Environmental Site Assessment and Remediation, Kahuku Ranch 114,000-acre site real estate transfer to Volcanos National Park. Completed.

McCoy Plantation, Honaunau, Hawaii

Phase I Environmental Site Assessment for real estate transfer of multiple parcels 500 acre agricultural/ranch lands to Puuhonua National Historical Park, Hawaii. Completed.

Hawaii MacFarms, Captain Cook, Hawaii

Phase I Environmental Site Assessment on separate locations for real estate transfer of large parcels of agricultural lands. Kona and Ka'u District, Hawaii. Completed.

University of Hawaii, Hilo, State of Hawaii

Prepared hydrogeologic reports for Aquaculture Farm, including well permitting, groundwater data collection and analysis, saltwater and freshwater well design, installation, pump testing, salinity analysis and reporting. Hilo, Hawaii. Completed.

Principal/Hawaii Operations Manager

EDUCATION

PhD, Geology & Geophysics,
University of Hawaii, 2005

M Eng, Civil (Geotechnical)
Technical University of Nova
Scotia, 1986

B Eng, Civil Engineering,
Technical University of Nova
Scotia, 1986

REGISTRATIONS

Professional Engineer,
WA (Environmental
Engineering)

LEED® Accredited
Professional

AFFILIATIONS

American Council of
Engineering Companies

- Risk Management Comm
Chair, 2012-2015
- National Director, 2005-
2007, 2016-2018

ACEC Hawaii

- President, 2004-2005
- Board Member 2002-
2007

Society of American Military
Engineers

National Association of
Environmental Professionals

██████████ has more than 20 years of experience providing environmental engineering consulting services for a wide variety of projects in Hawai'i and the Pacific, and on the US west coast. She has managed hundreds of environmental engineering projects in Hawaii and the Pacific. Projects encompass a variety of facility types and settings, and include assessment of soil, groundwater, surface water, and building materials for contaminants such as petroleum compounds, pesticides, PCBs, furans and dioxins, heavy metals, and asbestos.

██████████ has extensive experience in environmental permitting and compliance. She has facilitated a full range of Federal, State and local permits for many project types. She has procured CWA Section 401/404 permits for several projects. ██████████ has managed the preparation of EAs/EISs for public works projects and Phase I Environmental Site Assessments and Environmental Baseline Surveys for property transactions. She has provided environmental services for many design-build projects, at both design and construction phases. She has performed human-health and ecological risk assessments for contaminated properties, and has published on the risk assessment process.

REPRESENTATIVE PROJECT EXPERIENCE

Environmental Baseline Survey/Environmental Condition of Property Analysis, Moanalua Shopping Center, O'ahu, HI

Project Manager for an Environmental Baseline Survey for the transfer by lease of a Navy property to a private developer for redevelopment of a large shopping center and military services. Project included review of site history, regulatory records and geologic setting; conducting a site reconnaissance and interviews; conducting sampling; and providing a report. Environmental concerns addressed that the property included hazardous building materials and PCBs at transformer sites.

Environmental Baseline Survey/Environmental Condition of Property Analysis, Waikale Gulch (NAVMAG), O'ahu, HI

Project Manager for an Environmental Baseline Survey for the sale of a former Naval Magazine facility to a private interest. Project included review of site history, regulatory records and geologic setting; conducting a site reconnaissance and interviews; conducting sampling; and providing a report. Environmental concerns addressed that the property included hazardous building materials, PCBs at transformer sites, and metals, PCBs, dioxins, and unexploded ordinance at a former landfill site.



Site Characterization, NCTS, Finegayan, Guam

Project Manager for preliminary environmental investigations for NCTS Finegayan, Guam. Environmental scope of work consisted of an Environmental Baseline Survey effort, including historical plan review to assess potential environmental issues, site reconnaissance, interviews with personnel having historical knowledge of the environmental history of the facility, and preparation of a report. Plan review showed numerous environmental issues (e.g., historical buried tanks) unknown to current facility personnel.

Phase I Environmental Site Assessment, Kapolei Senior Housing Development, O'ahu, HI

Project Manager for a Phase I Environmental Site Assessment for a large property in Kapolei proposed for a Senior Housing Development. Project included review of site history, regulatory records and geologic setting, as well as conducting a site reconnaissance and interviews, and providing a report.

Environmental Investigation, Army Child Welfare Center, Fort Shafter, O'ahu, HI

Project Manager for an environmental investigation during design of a facility at Fort Shafter. Project included review of site history and regulatory records; developing a sampling plan and conducting surface soil sampling for pesticides and heavy metals; providing a report summarizing the investigation results; and providing input to specifications and design drawings to inform the construction contractor of required actions to address contaminated soil.

Global Hawk Aircraft Maintenance and Operations Center, Anderson Air Force Base, Guam

Project Manager for the design consultation and preparing design documents for the Global Hawk Aircraft Maintenance and Operations Center. Environmental concerns at the project site included extensive PCB contamination of soils, potential contamination from an oil-water separator, and hazardous building materials. Work included design consultation and design documents (plans, specifications and cost estimates) for handling and removal of hazardous materials and contaminated soil.

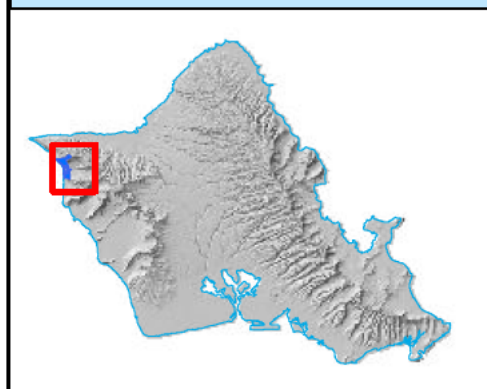
Keaau Middle School Environmental Investigation and Design, Kea'au, Island of Hawai'i, HI

Project Manager for environmental consultation associated with the design for demolition of several structures at the School. Environmental scope of work included investigation of soil contamination by organochloride pesticides, lead, and arsenic; investigation of building materials for arsenic, asbestos, and lead; developing specifications for handling and removal of hazardous materials or contaminated soil during demolition activities; environmental permitting, and consultation during demolition.

NOAA Pacific Region Center, Ford Island, O'ahu, HI

Project Manager for environmental and civil sustainability consultation for the NOAA Pacific Region Center on Ford Island. The environmental scope of work consisted of extensive hazardous materials surveys that identified high lead concentrations on building structural components, evaluation of encapsulation/remediation alternatives, and preparation of design documents for management of lead-based paint. The sustainability scope of work consisted of assisting the project civil engineer with assessing possible LEED points from storm water management and wastewater re-use.

FIGURES



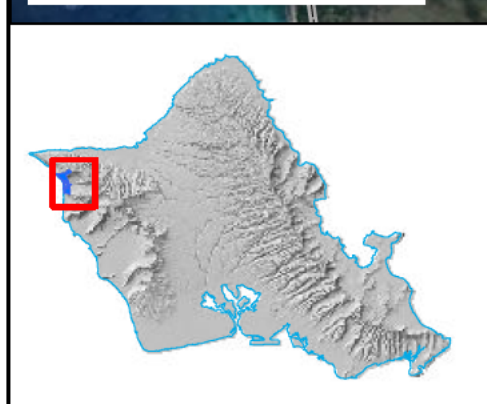
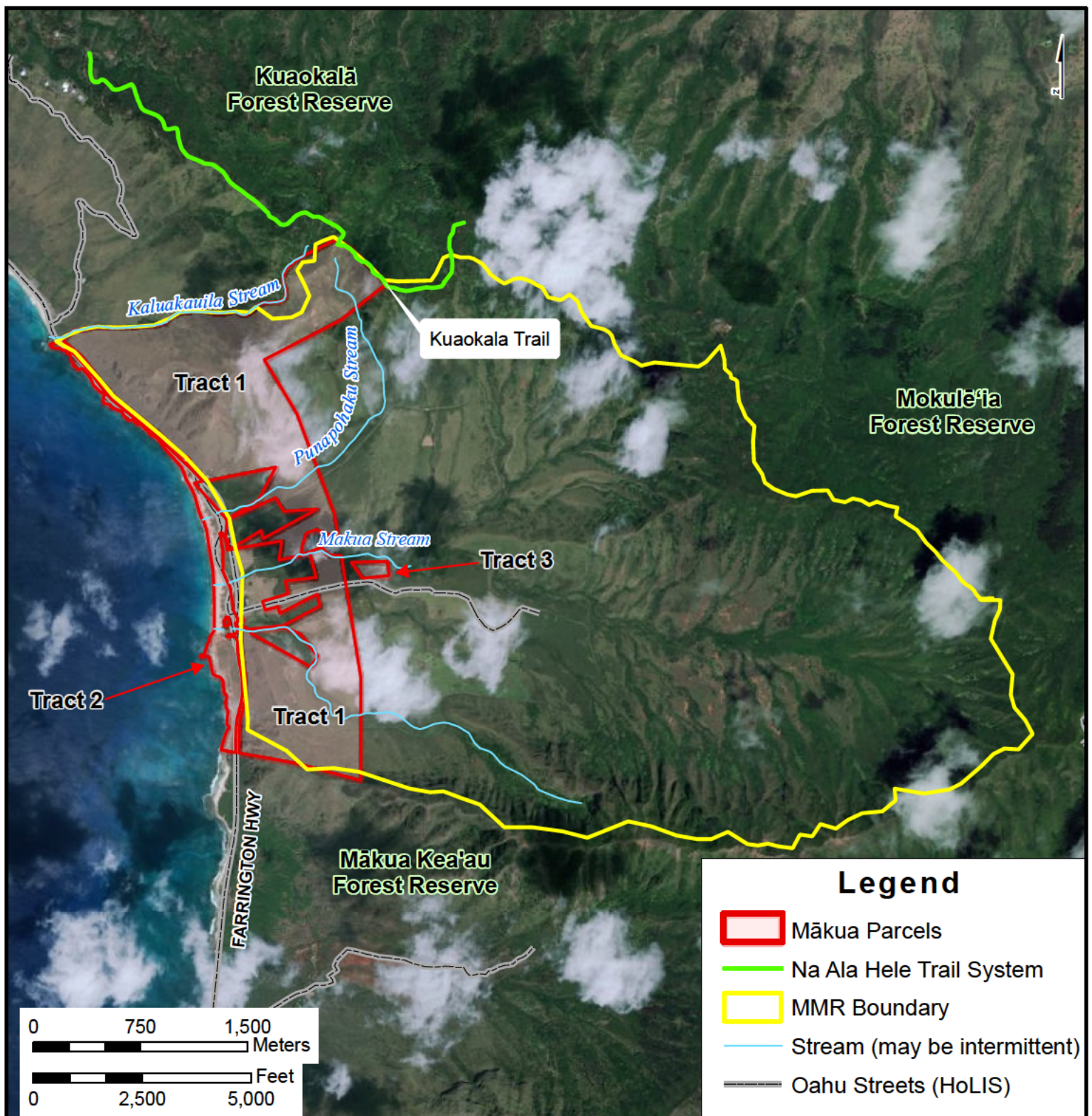
Contract No. W9128A-12-D-0005
Date: March 2017

Figure 1

Property Location Map

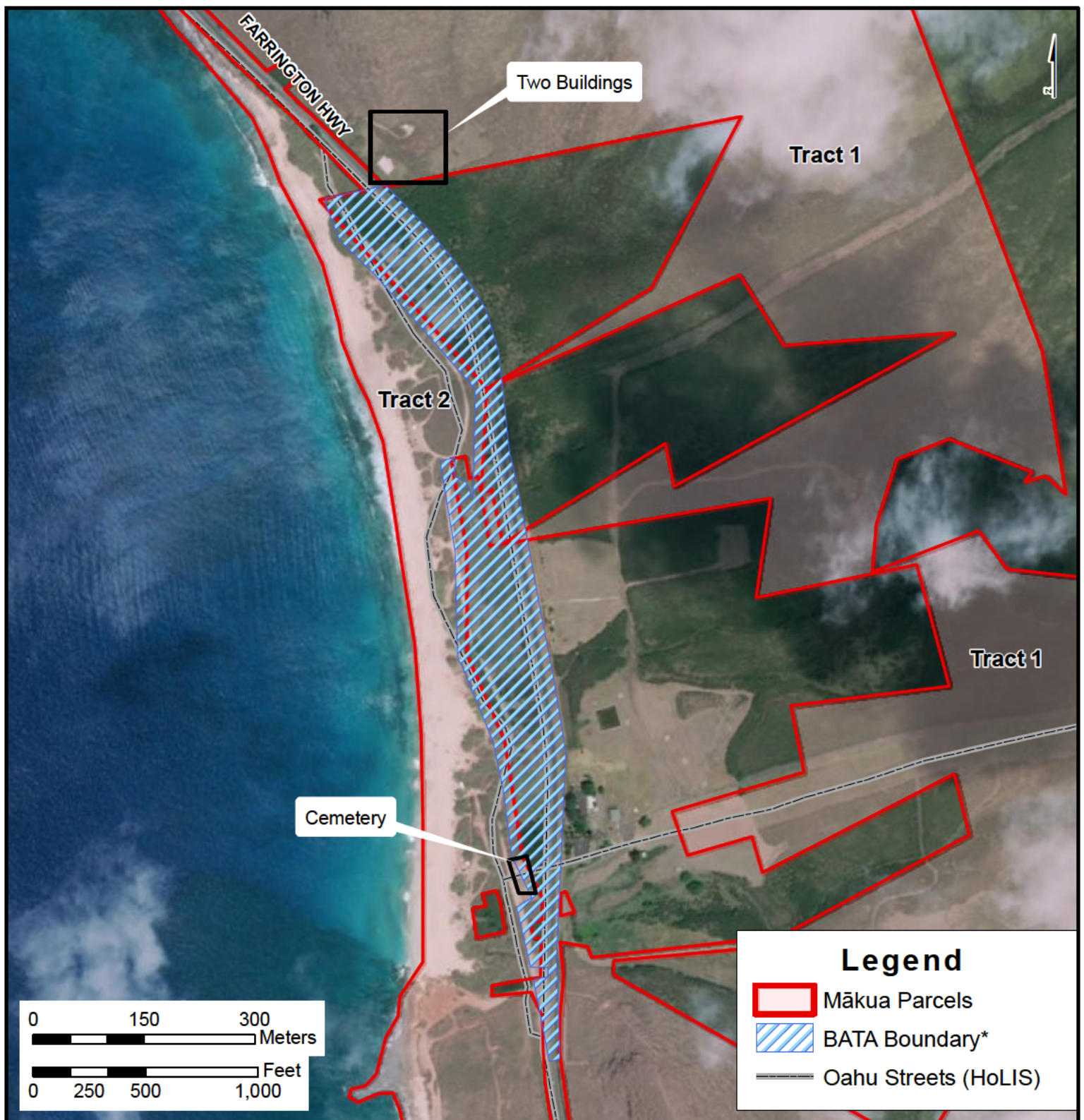
Mākua Parcels

Environmental Condition
of Property (ECoP)
Report for U.S. Army
Land Acquisition, Oahu



Contract No. W9128A-12-D-0005
Date: March 2017

Figure 2a
Natural Features
Mākua Parcels
Environmental Condition of Property (ECoP)
Report for U.S. Army Land Acquisition, Oahu



Contract No. W9128A-12-D-0005
Date: March 2017

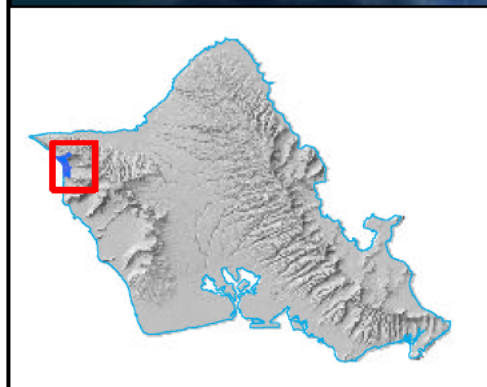
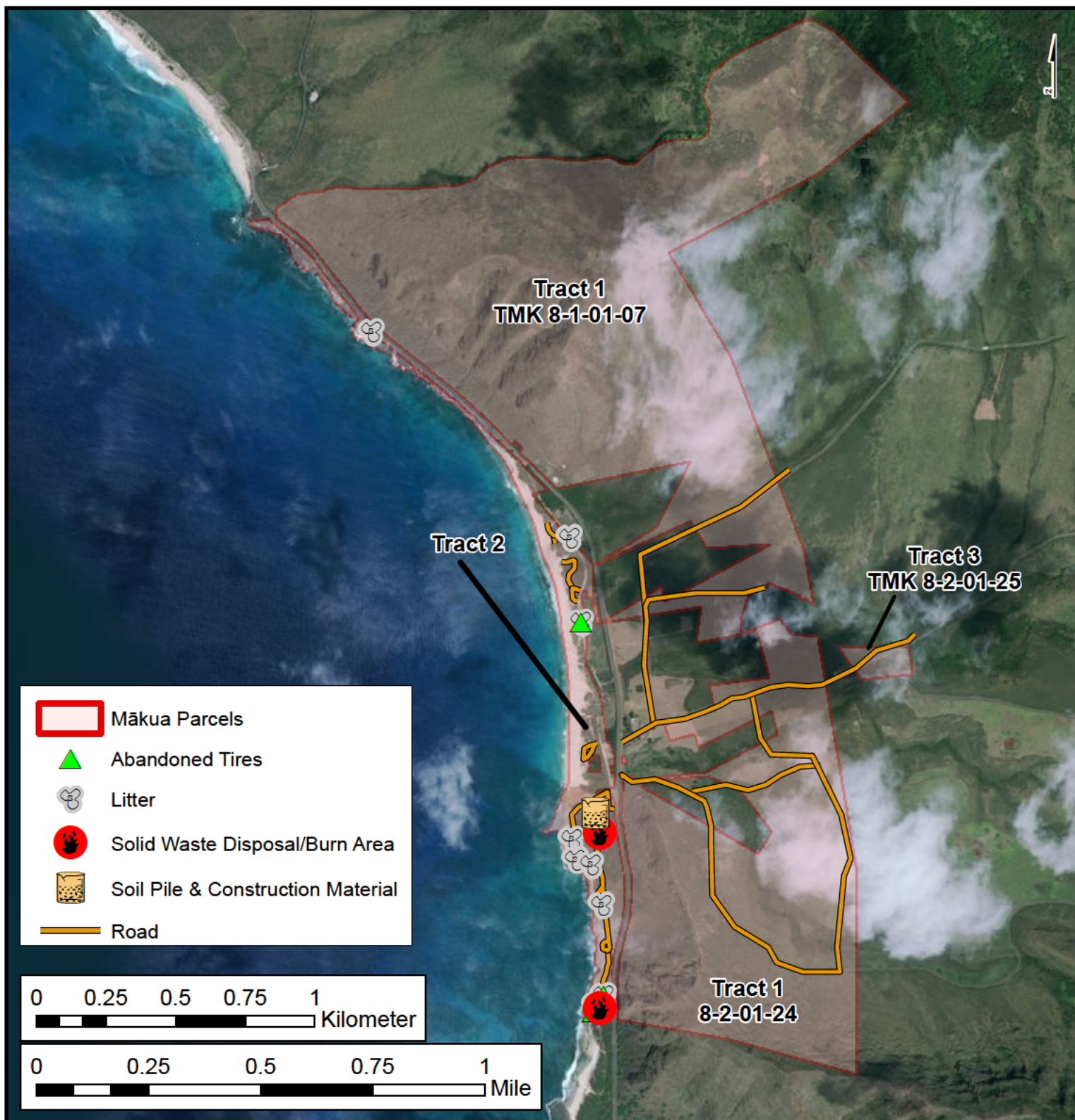
* Mākua Military Reservation BATA
MRS Remedial Investigation
Addendum Report - Hawaii
Garrison MMRP

Figure 2b

Site Features

Mākua Parcels

**Environmental Condition
of Property (ECoP)
Report for U.S. Army
Land Acquisition, Oahu**

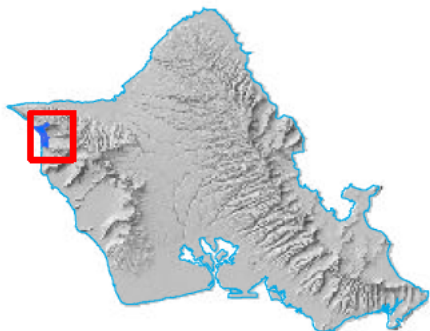
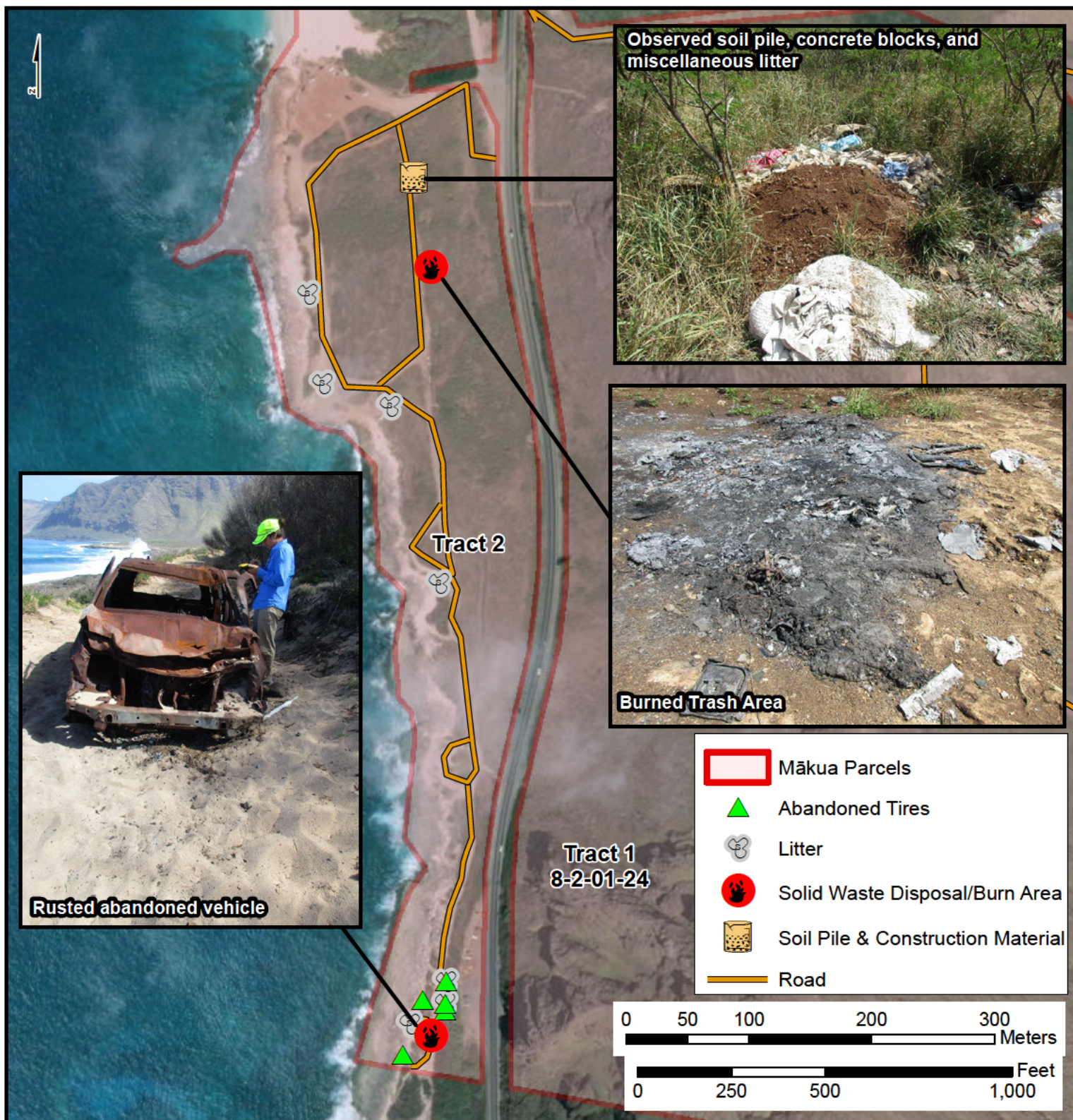


Contract No. W9128A-12-D-0005
Date: March 2017

Figure 3a

Field Observations

Mākua Parcels
Environmental Condition
of Property (ECoP)
Report for U.S. Army
Land Acquisition, Oahu



Contract No. W9128A-12-D-0005
Date: March 2017

Figure 3b
Tract 2
Field Observations
Mākua Parcels
Environmental Condition
of Property (ECoP)
Report for U.S. Army
Land Acquisition, Oahu

APPENDICES

APPENDIX A – ENVIRONMENTAL DATABASE REVIEW

EDR DATA MAP™ AREA STUDY REPORT

TABLE OF EDR “ORPHAN” SITES

EDR ENVIRONMENTAL LIENSEARCH™

EDR DATAMAP™ WELL SEARCH REPORT

Makua

Waianae, HI 96792

Inquiry Number: 4575351.5s

April 06, 2016

EDR DataMap™ Area Study

Thank you for your business.
Please contact EDR at [REDACTED]
with any questions or comments.

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EXECUTIVE SUMMARY

TARGET PROPERTY INFORMATION

ADDRESS

WAIANAE, HI 96792
WAIANAE, HI 96792

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records within the requested search area for the following databases:

FEDERAL RECORDS

NPL	National Priority List
Proposed NPL	Proposed National Priority List Sites
Delisted NPL	National Priority List Deletions
NPL LIENS	Federal Superfund Liens
SEMS	Superfund Enterprise Management System
SEMS-ARCHIVE	Superfund Enterprise Management System Archive
LIENS 2	CERCLA Lien Information
CORRACTS	Corrective Action Report
RCRA-TSDF	RCRA - Treatment, Storage and Disposal
RCRA-LQG	RCRA - Large Quantity Generators
RCRA-SQG	RCRA - Small Quantity Generators
RCRA-CESQG	RCRA - Conditionally Exempt Small Quantity Generator
RCRA NonGen / NLR	RCRA - Non Generators / No Longer Regulated
US ENG CONTROLS	Engineering Controls Sites List
US INST CONTROL	Sites with Institutional Controls
ERNS	Emergency Response Notification System
HMIRS	Hazardous Materials Information Reporting System
DOT OPS	Incident and Accident Data
US CDL	National Clandestine Laboratory Register
US BROWNFIELDS	A Listing of Brownfields Sites
FUDS	Formerly Used Defense Sites
LUCIS	Land Use Control Information System
CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
UMTRA	Uranium Mill Tailings Sites
ODI	Open Dump Inventory
DEBRIS REGION 9	Torres Martinez Reservation Illegal Dump Site Locations
US MINES	Mines Master Index File
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
SSTS	Section 7 Tracking Systems
ICIS	Integrated Compliance Information System

EXECUTIVE SUMMARY

PADS.....	PCB Activity Database System
MLTS.....	Material Licensing Tracking System
RADINFO.....	Radiation Information Database
FINDS.....	Facility Index System/Facility Registry System
RAATS.....	RCRA Administrative Action Tracking System
RMP.....	Risk Management Plans
FUELS PROGRAM.....	EPA Fuels Program Registered Listing
FUSRAP.....	Formerly Utilized Sites Remedial Action Program
COAL ASH DOE.....	Steam-Electric Plant Operation Data
COAL ASH EPA.....	Coal Combustion Residues Surface Impoundments List
ECHO.....	Enforcement & Compliance History Information
PRP.....	Potentially Responsible Parties
EPA WATCH LIST.....	EPA WATCH LIST
US FIN ASSUR.....	Financial Assurance Information
PCB TRANSFORMER.....	PCB Transformer Registration Database
US HIST CDL.....	Delisted National Clandestine Laboratory Register
SCRD DRYCLEANERS.....	State Coalition for Remediation of Drycleaners Listing
2020 COR ACTION.....	2020 Corrective Action Program List
FEMA UST.....	Underground Storage Tank Listing
FEDERAL FACILITY.....	Federal Facility Site Information listing
US AIRS.....	Aerometric Information Retrieval System Facility Subsystem
LEAD SMELTERS.....	Lead Smelter Sites

STATE AND LOCAL RECORDS

SHWS.....	Sites List
SWF/LF.....	Permitted Landfills in the State of Hawaii
UIC.....	Underground Injection Wells Listing
LUST.....	Leaking Underground Storage Tank Database
UST.....	Underground Storage Tank Database
SPILLS.....	Release Notifications
ENG CONTROLS.....	Engineering Control Sites
INST CONTROL.....	Sites with Institutional Controls
VCP.....	Voluntary Response Program Sites
DRYCLEANERS.....	Permitted Drycleaner Facility Listing
BROWNFIELDS.....	Brownfields Sites
CDL.....	Clandestine Drug Lab Listing
AIRS.....	List of Permitted Facilities

TRIBAL RECORDS

INDIAN RESERV.....	Indian Reservations
INDIAN ODI.....	Report on the Status of Open Dumps on Indian Lands
INDIAN LUST.....	Leaking Underground Storage Tanks on Indian Land
INDIAN UST.....	Underground Storage Tanks on Indian Land
INDIAN VCP.....	Voluntary Cleanup Priority Listing

EDR PROPRIETARY RECORDS

EDR MGP.....	EDR Proprietary Manufactured Gas Plants
EDR Hist Cleaner.....	EDR Exclusive Historic Dry Cleaners
RGA HWS.....	Recovered Government Archive State Hazardous Waste Facilities List
RGA LUST.....	Recovered Government Archive Leaking Underground Storage Tank
RGA LF.....	Recovered Government Archive Solid Waste Facilities List

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

EXECUTIVE SUMMARY

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.

FEDERAL RECORDS

DOD: 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.

A review of the DOD list, as provided by EDR, and dated 12/31/2005 has revealed that there is 1 DOD site within the searched area.

<u>Site</u>	<u>Address</u>	<u>Map ID</u>	<u>Page</u>
MAKUA MILITARY RESER		0	3

EDR PROPRIETARY RECORDS

EDR Hist Auto: 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.

A review of the EDR Hist Auto list, as provided by EDR, has revealed that there is 1 EDR Hist Auto site within the searched area.

<u>Site</u>	<u>Address</u>	<u>Map ID</u>	<u>Page</u>
Not reported		1	3

EXECUTIVE SUMMARY

Please refer to the end of the findings report for unmapped orphan sites due to poor or inadequate address information.

MAP FINDINGS SUMMARY

<u>Database</u>	<u>Total Plotted</u>
<u>FEDERAL RECORDS</u>	
NPL	0
Proposed NPL	0
Delisted NPL	0
NPL LIENS	0
SEMS	0
SEMS-ARCHIVE	0
LIENS 2	0
CORRACTS	0
RCRA-TSDF	0
RCRA-LQG	0
RCRA-SQG	0
RCRA-CESQG	0
RCRA NonGen / NLR	0
US ENG CONTROLS	0
US INST CONTROL	0
ERNS	0
HMIRS	0
DOT OPS	0
US CDL	0
US BROWNFIELDS	0
DOD	1
FUDS	0
LUCIS	0
CONSENT	0
ROD	0
UMTRA	0
ODI	0
DEBRIS REGION 9	0
US MINES	0
TRIS	0
TSCA	0
FTTS	0
HIST FTTS	0
SSTS	0
ICIS	0
PADS	0
MLTS	0
RADINFO	0
FINDS	0
RAATS	0
RMP	0
FUELS PROGRAM	0
FUSRAP	0
COAL ASH DOE	0
COAL ASH EPA	0
ECHO	0
PRP	0
EPA WATCH LIST	0

MAP FINDINGS SUMMARY

<u>Database</u>	<u>Total Plotted</u>
US FIN ASSUR	0
PCB TRANSFORMER	0
US HIST CDL	0
SCRD DRYCLEANERS	0
2020 COR ACTION	0
FEMA UST	0
FEDERAL FACILITY	0
US AIRS	0
LEAD SMELTERS	0
<u>STATE AND LOCAL RECORDS</u>	
SHWS	0
SWF/LF	0
UIC	0
LUST	0
UST	0
SPILLS	0
ENG CONTROLS	0
INST CONTROL	0
VCP	0
DRYCLEANERS	0
BROWNFIELDS	0
CDL	0
AIRS	0
<u>TRIBAL RECORDS</u>	
INDIAN RESERV	0
INDIAN ODI	0
INDIAN LUST	0
INDIAN UST	0
INDIAN VCP	0
<u>EDR PROPRIETARY RECORDS</u>	
EDR MGP	0
EDR Hist Auto	1
EDR Hist Cleaner	0
RGA HWS	0
RGA LUST	0
RGA LF	0

NOTES:

Sites may be listed in more than one database

MAP FINDINGS

Map ID			EDR ID Number
Direction			
Distance			
Distance (ft.)	Site	Database(s)	EPA ID Number

DOD	MAKUA MILITARY RESERVATION	DOD	CUSA147726
Region	MAKUA MILITARY RESERVATIO (County), HI		N/A

DOD:

Feature 1:	Army DOD
Feature 2:	Not reported
Feature 3:	Not reported
URL:	Not reported
Name 1:	Makua Military Reservation
Name 2:	Not reported
Name 3:	Not reported
State:	HI
DOD Site:	Yes
Tile name:	HIHONOLULU

1	87132 FARRINGTON HWY	EDR Hist Auto	1015660353
	WAIANAE, HI 96792		N/A

EDR Historical Auto Stations:

Name:	LEEWARD AUTO PARTS INCORPORATED
Year:	1999
Address:	87132 FARRINGTON HWY

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.

FEDERAL RECORDS

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: 10/30/2015	Source: EPA
Date Data Arrived at EDR: 11/07/2015	Telephone: N/A
Date Made Active in Reports: 01/04/2016	Last EDR Contact: 04/05/2016
Number of Days to Update: 58	Next Scheduled EDR Contact: 04/18/2016
	Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)

Telephone: [REDACTED]

EPA Region 1

Telephone: [REDACTED]

EPA Region 3

Telephone: [REDACTED]

EPA Region 4

Telephone: [REDACTED]

EPA Region 5

Telephone: [REDACTED]

EPA Region 10

Telephone: [REDACTED]

EPA Region 6

Telephone: [REDACTED]

EPA Region 7

Telephone: [REDACTED]

EPA Region 8

Telephone: [REDACTED]

EPA Region 9

Telephone: [REDACTED]

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: 10/30/2015	Source: EPA
Date Data Arrived at EDR: 11/07/2015	Telephone: N/A
Date Made Active in Reports: 01/04/2016	Last EDR Contact: 04/05/2016
Number of Days to Update: 58	Next Scheduled EDR Contact: 04/18/2016
	Data Release Frequency: Quarterly

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: 10/30/2015	Source: EPA
Date Data Arrived at EDR: 11/07/2015	Telephone: N/A
Date Made Active in Reports: 01/04/2016	Last EDR Contact: 04/05/2016
Number of Days to Update: 58	Next Scheduled EDR Contact: 04/18/2016
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: [REDACTED]
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

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 known 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: 01/11/2016
Date Data Arrived at EDR: 01/22/2016
Date Made Active in Reports: 03/18/2016
Number of Days to Update: 56

Source: EPA
Telephone: [REDACTED]
Last EDR Contact: 04/05/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Quarterly

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: 01/11/2016
Date Data Arrived at EDR: 01/22/2016
Date Made Active in Reports: 03/18/2016
Number of Days to Update: 56

Source: EPA
Telephone: [REDACTED]
Last EDR Contact: 04/05/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Quarterly

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: [REDACTED]
Last EDR Contact: 03/11/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/09/2015
Date Data Arrived at EDR: 03/02/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 34

Source: EPA
Telephone: [REDACTED]
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 12/09/2015
Date Data Arrived at EDR: 03/02/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: (415) [REDACTED]
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Quarterly

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: 12/09/2015
Date Data Arrived at EDR: 03/02/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: (415) [REDACTED]
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
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: 12/09/2015
Date Data Arrived at EDR: 03/02/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: (415) [REDACTED]
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
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: 12/09/2015
Date Data Arrived at EDR: 03/02/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: (415) [REDACTED]
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Varies

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: 12/09/2015
Date Data Arrived at EDR: 03/02/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: (415) [REDACTED]
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
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: 09/10/2015
Date Data Arrived at EDR: 09/11/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 53

Source: Environmental Protection Agency
Telephone: [REDACTED]
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
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: 09/10/2015
Date Data Arrived at EDR: 09/11/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 53

Source: Environmental Protection Agency
Telephone: [REDACTED]
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Varies

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: 06/22/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 82

Source: National Response Center, United States Coast Guard
Telephone: [REDACTED]
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Annually

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 06/24/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/02/2015
Number of Days to Update: 68

Source: U.S. Department of Transportation
Telephone: [REDACTED]
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Annually

DOT OPS: Incident and Accident Data

Department of Transportation, 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 Transportation, Office of Pipeline Safety
Telephone: [REDACTED]
Last EDR Contact: 02/03/2016
Next Scheduled EDR Contact: 05/16/2016
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.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 09/17/2015
Date Data Arrived at EDR: 12/04/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 76

Source: Drug Enforcement Administration
Telephone: [REDACTED]
Last EDR Contact: 03/01/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Quarterly

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: 12/22/2015
Date Data Arrived at EDR: 12/23/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: [REDACTED]
Last EDR Contact: 03/22/2016
Next Scheduled EDR Contact: 07/04/2016
Data Release Frequency: Semi-Annually

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: [REDACTED]
Last EDR Contact: 01/15/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Semi-Annually

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: [REDACTED]
Last EDR Contact: 03/11/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Varies

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: [REDACTED]
Last EDR Contact: 02/16/2016
Next Scheduled EDR Contact: 05/30/2016
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: 12/31/2014
Date Data Arrived at EDR: 04/17/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 46

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 03/24/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Varies

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: [REDACTED]
Last EDR Contact: 03/08/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Annually

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: [REDACTED]
Last EDR Contact: 03/28/2016
Next Scheduled EDR Contact: 06/06/2016
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: [REDACTED]
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: [REDACTED]
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: No Update Planned

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: 08/18/2015
Date Data Arrived at EDR: 09/01/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 125

Source: Department of Labor, Mine Safety and Health Administration
Telephone: [REDACTED]
Last EDR Contact: 03/02/2016
Next Scheduled EDR Contact: 06/13/2016
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: [REDACTED]
Last EDR Contact: 03/04/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: [REDACTED]
Last EDR Contact: 03/04/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Varies

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: [REDACTED]
Last EDR Contact: 02/24/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Annually

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: [REDACTED]
Last EDR Contact: 03/24/2016
Next Scheduled EDR Contact: 07/04/2016
Data Release Frequency: Every 4 Years

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: [REDACTED]
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
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: [REDACTED]
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
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.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: [REDACTED]
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: [REDACTED]
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

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: [REDACTED]
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
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: [REDACTED]
Last EDR Contact: 01/08/2016
Next Scheduled EDR Contact: 04/25/2016
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: 07/01/2014
Date Data Arrived at EDR: 10/15/2014
Date Made Active in Reports: 11/17/2014
Number of Days to Update: 33

Source: EPA
Telephone: [REDACTED]
Last EDR Contact: 01/12/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Annually

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: 06/26/2015
Date Data Arrived at EDR: 07/10/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 95

Source: Nuclear Regulatory Commission
Telephone: [REDACTED]
Last EDR Contact: 02/08/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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	Source: Environmental Protection Agency
Date Data Arrived at EDR: 07/09/2015	Telephone: [REDACTED]
Date Made Active in Reports: 09/16/2015	Last EDR Contact: 01/07/2016
Number of Days to Update: 69	Next Scheduled EDR Contact: 04/18/2016
	Data Release Frequency: Quarterly

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	Source: EPA
Date Data Arrived at EDR: 09/09/2015	Telephone: (415) [REDACTED]
Date Made Active in Reports: 11/03/2015	Last EDR Contact: 03/08/2016
Number of Days to Update: 55	Next Scheduled EDR Contact: 06/20/2016
	Data Release Frequency: Quarterly

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	Source: EPA
Date Data Arrived at EDR: 07/03/1995	Telephone: [REDACTED]
Date Made Active in Reports: 08/07/1995	Last EDR Contact: 06/02/2008
Number of Days to Update: 35	Next Scheduled EDR Contact: 09/01/2008
	Data Release Frequency: No Update Planned

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: 08/01/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 08/26/2015	Telephone: [REDACTED]
Date Made Active in Reports: 11/03/2015	Last EDR Contact: 01/25/2016
Number of Days to Update: 69	Next Scheduled EDR Contact: 05/09/2016
	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.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: [REDACTED]
Last EDR Contact: 02/26/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Biennially

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: [REDACTED]
Last EDR Contact: 02/12/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 11/25/2014
Date Data Arrived at EDR: 11/26/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: [REDACTED]
Last EDR Contact: 01/26/2016
Next Scheduled EDR Contact: 04/18/2016
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 1931 and 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: [REDACTED]
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
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: [REDACTED]
Last EDR Contact: 02/12/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Quarterly

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: 09/17/2015
Date Data Arrived at EDR: 12/04/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 76

Source: Drug Enforcement Administration
Telephone: [REDACTED]
Last EDR Contact: 03/01/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: No Update Planned

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.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: [REDACTED]
Last EDR Contact: 02/19/2016
Next Scheduled EDR Contact: 05/30/2016
Data Release Frequency: Varies

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: [REDACTED]
Last EDR Contact: 01/08/2016
Next Scheduled EDR Contact: 04/25/2016
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: 03/11/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Varies

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: 03/26/2015
Date Data Arrived at EDR: 04/08/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: [REDACTED]
Last EDR Contact: 01/06/2016
Next Scheduled EDR Contact: 04/18/2016
Data Release Frequency: Varies

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: [REDACTED]
Last EDR Contact: 01/13/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Varies

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: [REDACTED]
Last EDR Contact: 03/24/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: [REDACTED]
Last EDR Contact: 03/24/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Annually

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: 09/01/2015
Date Data Arrived at EDR: 09/03/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 61

Source: Environmental Protection Agency
Telephone: [REDACTED]
Last EDR Contact: 02/16/2016
Next Scheduled EDR Contact: 05/30/2016
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: [REDACTED]
Last EDR Contact: 02/09/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Quarterly

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: 11/23/2015
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 86

Source: Department of Energy
Telephone: [REDACTED]
Last EDR Contact: 02/08/2016
Next Scheduled EDR Contact: 05/23/2016
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: [REDACTED]
Last EDR Contact: 01/29/2016
Next Scheduled EDR Contact: 05/09/2016
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: 11/23/2015
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 86

Source: EPA
Telephone: [REDACTED]
Last EDR Contact: 02/24/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: [REDACTED]
Last EDR Contact: 03/23/2016
Next Scheduled EDR Contact: 07/04/2016
Data Release Frequency: Quarterly

STATE AND LOCAL RECORDS

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: 01/22/2016
Date Data Arrived at EDR: 01/26/2016
Date Made Active in Reports: 03/02/2016
Number of Days to Update: 36

Source: Department of Health
Telephone: [REDACTED]
Last EDR Contact: 02/26/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Semi-Annually

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: [REDACTED]
Last EDR Contact: 04/01/2016
Next Scheduled EDR Contact: 07/11/2016
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: [REDACTED]
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Varies

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: [REDACTED]
Last EDR Contact: 03/04/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Semi-Annually

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: [REDACTED]
Last EDR Contact: 03/04/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Semi-Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 05/31/2015
Date Data Arrived at EDR: 01/26/2016
Date Made Active in Reports: 03/02/2016
Number of Days to Update: 36

Source: Department of Health
Telephone: [REDACTED]
Last EDR Contact: 02/24/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

ENG CONTROLS: Engineering Control Sites

A listing of sites with engineering controls in place.

Date of Government Version: 01/22/2016
Date Data Arrived at EDR: 01/26/2016
Date Made Active in Reports: 03/02/2016
Number of Days to Update: 36

Source: Department of Health
Telephone: [REDACTED]
Last EDR Contact: 02/26/2016
Next Scheduled EDR Contact: 06/06/2016
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: 01/22/2016
Date Data Arrived at EDR: 01/26/2016
Date Made Active in Reports: 03/02/2016
Number of Days to Update: 36

Source: Department of Health
Telephone: [REDACTED]
Last EDR Contact: 02/26/2016
Next Scheduled EDR Contact: 06/06/2016
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: 01/22/2016
Date Data Arrived at EDR: 01/26/2016
Date Made Active in Reports: 03/02/2016
Number of Days to Update: 36

Source: Department of Health
Telephone: [REDACTED]
Last EDR Contact: 02/26/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

DRYCLEANERS: Permitted Drycleaner Facility Listing

A listing of permitted drycleaner facilities in the state.

Date of Government Version: 10/05/2015
Date Data Arrived at EDR: 10/08/2015
Date Made Active in Reports: 11/16/2015
Number of Days to Update: 39

Source: Department of Health
Telephone: [REDACTED]
Last EDR Contact: 04/04/2016
Next Scheduled EDR Contact: 07/18/2016
Data Release Frequency: Varies

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: 01/22/2016
Date Data Arrived at EDR: 01/26/2016
Date Made Active in Reports: 03/02/2016
Number of Days to Update: 36

Source: Department of Health
Telephone: [REDACTED]
Last EDR Contact: 02/26/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

CDL: Clandestine Drug Lab Listing

A listing of clandestine drug lab site locations.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: [REDACTED]
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Varies

AIRS: List of Permitted Facilities

A listing of permitted facilities in the state.

Date of Government Version: 12/29/2015
Date Data Arrived at EDR: 01/05/2016
Date Made Active in Reports: 03/02/2016
Number of Days to Update: 57

Source: Department of Health
Telephone: [REDACTED]
Last EDR Contact: 04/04/2016
Next Scheduled EDR Contact: 07/18/2016
Data Release Frequency: Varies

TRIBAL RECORDS

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: [REDACTED]
Last EDR Contact: 01/15/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Semi-Annually

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: [REDACTED]
Last EDR Contact: 02/01/2016
Next Scheduled EDR Contact: 05/16/2016
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: [REDACTED]
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
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: 03/30/2015
Date Data Arrived at EDR: 04/28/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 55

Source: EPA Region 7
Telephone: [REDACTED]
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
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: [REDACTED]
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: [REDACTED]
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

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: 11/04/2015
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: [REDACTED]
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 08/20/2015
Date Data Arrived at EDR: 10/30/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 111

Source: EPA Region 6
Telephone: [REDACTED]
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

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: 01/08/2015
Date Data Arrived at EDR: 01/08/2015
Date Made Active in Reports: 02/09/2015
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: [REDACTED]
Last EDR Contact: 01/27/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 11/24/2015
Date Data Arrived at EDR: 12/01/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 34

Source: EPA Region 4
Telephone: [REDACTED]
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
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: [REDACTED]
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
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)

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 11/24/2015
Date Data Arrived at EDR: 12/01/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 34

Source: EPA Region 4
Telephone: [REDACTED]
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Semi-Annually

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: [REDACTED]
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 05/09/2016
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: 08/20/2015
Date Data Arrived at EDR: 10/30/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 111

Source: EPA Region 6
Telephone: [REDACTED]
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
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: [REDACTED]
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
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: 12/14/2014
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 28

Source: EPA Region 9
Telephone: [REDACTED]
Last EDR Contact: 01/27/2016
Next Scheduled EDR Contact: 05/09/2016
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: 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: [REDACTED]
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

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).

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: [REDACTED]
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

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: [REDACTED]
Last EDR Contact: 04/01/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Listing

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: [REDACTED]
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

EDR PROPRIETARY 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.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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

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

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

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.

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.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

AHA Hospitals:

Source: American Hospital Association, Inc.

Telephone: [REDACTED]

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: [REDACTED]

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: [REDACTED]

Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools

Source: National Center for Education Statistics

Telephone: [REDACTED]

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: [REDACTED]

The National Center for Education Statistics' primary database on private school locations in the United States.

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

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

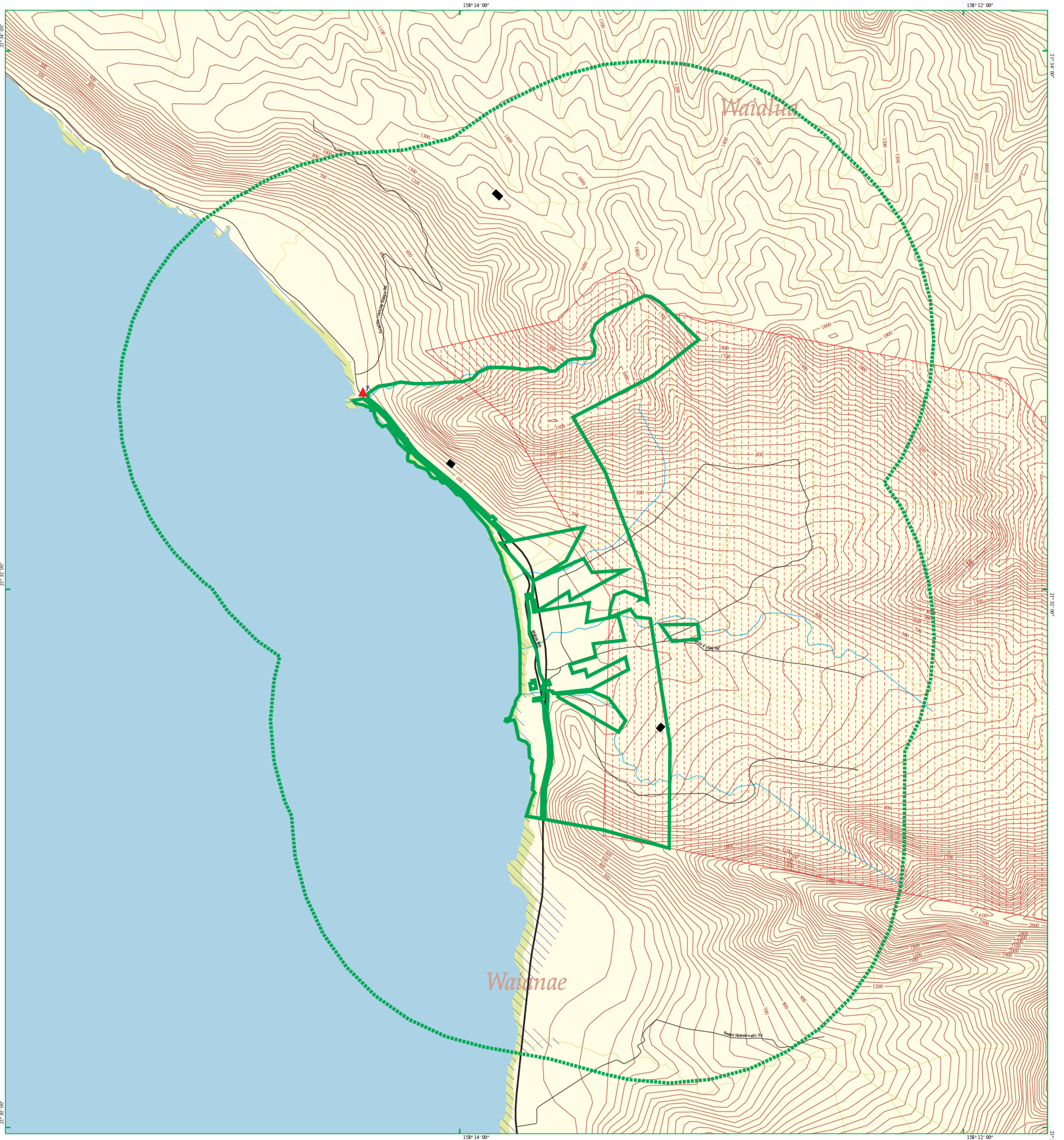
Source: Office of Planning

Telephone: [REDACTED]

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

STREET AND ADDRESS INFORMATION

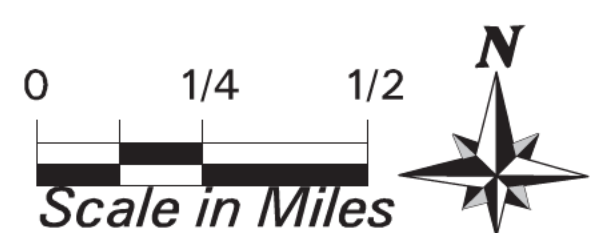
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EDR DataMap® - Area Study

Makua

- | | | | |
|--|-------------|---------------|----------------------------|
| Listed Sites | Roads | Contour Lines | Water |
| Earthquake Epicenters (Richter 5 or greater) | Major Roads | Pipelines | Superfund Sites |
| Search Boundary | Waterways | Powerlines | Federal DOD Sites |
| | Railroads | Fault Lines | Indian Reservations BIA |
| | | | 100-Yr Flood Zones |
| | | | National Wetland Inventory |



Count: 19 records

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
NANAKULI	S106817253	HAKIMO ROAD, MAILE	HAKIMO RD	96792	SHWS, SPILLS
NANAKULI	1003879109	KAISER CEMENT CORP WAIANAE PLT	LUALAULEI ACC RD E OF FARR HWY	96792	SEMS-ARCHIVE
NANAKULI	S106818059	KAISER CEMENT CORP WAIANAE POINT	LUALAULEI ACCESS RD	96792	SHWS
WAIALUA	1015730978	WAIALUA SUGAR MILL	67 202 KUPAHU STREET	96791	SEMS, RCRA NonGen / NLR
WAIALUA	U004228179	RURAL EMERGENCY OPERATING CENTER	WAIALUA HIGH SCHOOL67-170 FARRINGTON HWY	96791	UST
WAIANAE	S111704801	NAVMAG LLL BUILDING 7 LOCOMOTIVE SHOP	61ST ST	96792	SHWS
WAIANAE	S111704800	NAVMAG LLL BUILDING 415 AUTOMOTIVE SERVICE STATION	66TH ST	96792	SHWS
WAIANAE	1015730971	USARMY MAKUA MILITARY RESERVATION	FARRINGTON HWY	96792	SEMS, CORRACTS, RCRA-TSDF, RCRA-CESQG
WAIANAE	1012178234	DEPARTMENT OF TRANSPORTATION-HWYS DIVISIO	FARRINGTON HWY	96792	RCRA NonGen / NLR
WAIANAE	1016956268	ISLAND REDEMPTION & RECYCLING	87-1796 FARRINGTON HWY	96792	RCRA NonGen / NLR
WAIANAE	1012178213	OUR LADY OF KEAAU RETREAT CENTER	83 390 FARRINGTON HWY	96792	RCRA NonGen / NLR
WAIANAE	1006819047	P & S SANITARY HAULING INC	87-746 FARRINGTON HWY	96792	SHWS
WAIANAE	1006819275	MAILI KAI EMERGENCY ACCESS ROAD	HAKIMO RD	96792	SHWS, SPILLS
WAIANAE	S111704802	NAVMAG LLL BUILDING 78 AUTOMOTIVE GARAGE	KOLEKOLE RD	96792	SHWS
WAIANAE	S118422860	WAIANAE ELEMENTARY SCHOOL DIESEL UST	82-220 MCARTHUR ST		SHWS
WAIANAE	S118422799	FUDS OFFSHORE WAIANAE SEWAGE OUTFALL	OFF SHORE		SHWS
WAIANAE	1014472031	ORDNANCE REEF BARGE	POKAI BAY	96792	RCRA-TSDF, RCRA NonGen / NLR
WAIANAE	S117391482	NCTAMSPAC RADIO TRANSMITTER FACILITY	TOWER DR	96792	SHWS
WAIANAE		LUALAULEI			
WAIANAE	1006819659	WAIANAE LANDFILL	572 WAIANAE VALLEY RD	96792	SHWS

TABLE 1: EDR "Orphan" Sites

EDR ID	Site Name and Address	Location relative to Makua Parcel(s)	Regulatory Database	Status	Potential Concern?
S106817253	Hakimo Road, Nanakuli	>1 mile distance from nearest site boundary	SHWS, Spills	NFA (2007)	None: Distance
1003879109	Kaiser Cement Corp Waianae PLT, Lualualei Access Road East of Farrington Highway, Nanakuli	>1 mile distance from nearest site boundary	SEMS-Archive	NFRAP (1991)	None: Distance
S106818059	Kaiser Cement Corp Waianae Point, Lualualei Access Road, Nanakuli	>1 mile distance from nearest site boundary	SHWS	NFA (2012) Site closure date - May 2012	None: Distance
1015730978	Waialua Sugar Company – 97 Kealohanui Street, Waialua	>1 mile distance from nearest site boundary	CERCLIS, RCRA NonGen/NLR	CERCLIS discovery in 2000 resulting in state-lead cleanup. Combined site inspection started in 2002 and completed in 2005 resulted in higher priority for further assessment – primary responsibility is State fund financed	None: Distance; RCR NLR NonGen does not presently generate hazardous waste
U004228179	Rural Emergency Operating Center – 67-170 Farrington Highway (Waialua High School)	>1 mile distance from nearest site boundary	UST	UST M-1A (550-gallons diesel) installed 1990 and currently in use; UST R-1 installed 1965 (1,200-gallons Diesel) and Permanently Out of Use	None: Distance; UST M-1A had violations found in May 2015 according to state lead inspection of UST
S111704801	NAVMAG LLL Building 7 Locomotive Shop, 61 st Street, Waianae	>1 mile distance from nearest site boundary	SHWS	NFA (2014)	None: Distance
S111704800	NAVMAG LLL Building 415 Automotive Service Station, 66 th Street, Waianae	>1 mile distance from nearest site boundary	SHWS	NFA (2014)	None: Distance
1015730971	US Army Makua Military Reservation, 82-180 Farrington Hwy, Waianae	Within Tract 1	SEMS, CORRACTS, RCRA-TSDF, RCRA-CESQG	Federal Facility-Lead Cleanup	Entire Makua Military Reservation

EDR ID	Site Name and Address	Location relative to Makua Parcel(s)	Regulatory Database	Status	Potential Concern?
1012178234	Department of Transportation-HWYS Division	>1 mile distance from nearest site boundary	RCRA NonGen/NLR	Small quantity generators (SQGs) – no hazards found	None: Distance
1016956268	Island Redemption & Recycling, 87-1796 Farrington Highway, Waianae	>1 mile distance from nearest site boundary	RCRA NonGen/NLR	Accumulated waste on site batteries, lamps, thermostats – no violations found	None: Distance
1012178213	Our Lady of Keaau Retreat Center, 83-390 Farrington Highway, Waianae	>1 mile distance from nearest site boundary	RCRA NonGen/NLR	Small quantity generators (SQGs) – no violations found	None: Distance
1006819047	P&S Sanitary Hauling, LLC 87-746 Farrington Highway, Waianae	>1 mile distance from nearest site boundary	SHWS	No HEER Environmental Interest, Site closure date - March 1996	None: Distance
1006819275	Maili Kai Emergency Access Road, Hakimo Road, Waianae	>1 mile distance from nearest site boundary	SHWS, SPILLS	NFA (2001)	None: Distance
S111704802	NAVMAG LLL Building 78 Automotive Garage, Kolekole Road, Waianae	>1 mile distance from nearest site boundary	SHWS	NFA (2014)	None: Distance
S118422860	Waianae Elementary School Diesel UST, 82-220 McArthur Street, Waianae	>1 mile distance from nearest site boundary	SHWS	Hazard Present, priority low. Contamination found – diesel fuel	None: Distance
S118422799	FUDS Offshore Waianae Sewage Outfall	>1 mile distance from nearest site boundary	SHWS	Hazard Present, assessment ongoing	None: Distance (Offshore)
1014472031	Ordnance Reef Barge, Pokai Bay	>1 mile distance from nearest site boundary	SHWS	Engaged in the treatment, storage or disposal of hazardous waste	None: Distance (Offshore)
S117391482	NCTAMS Radio Transmitter Facility Luahalei, Tower Drive, Waianae 96792	>1 mile distance from nearest site boundary	SHWS	Installation Restoration Program; Response Ongoing	None: Distance
1006819659	Waianae Landfill, 572 Waianae Valley Road	>1 mile distance from nearest site boundary	SHWS	ISST-NFA (1996)	None: Distance

Makua

Not Reported

Waianae, Hawaii 96792

Inquiry Number: 4627238.1

June 2, 2016

The EDR Environmental LienSearch™



6 Armstrong Road,
Fourth Floor
Shelton, CT 06484
[REDACTED]
www.edrnet.com

EDR Environmental LienSearch™ Report

The EDR Environmental LienSearch Report provides results from a search of available current land title records for environmental cleanup liens and other activity and use limitations, such as engineering controls and institutional controls.

A network of professional, trained researchers, following established procedures, uses client supplied address information to:

- search for parcel information and/or legal description;
- search for ownership information;
- research official land title documents recorded at jurisdictional agencies such as recorders' offices, registries of deeds, county clerks' offices, etc.;
- access a copy of the deed;
- search for environmental encumbering instrument(s) associated with the deed;
- provide a copy of any environmental encumbrance(s) based upon a review of key words in the instrument(s) (title, parties involved, and description); and
- provide a copy of the deed or cite documents reviewed.

Thank you for your business.
Please contact EDR at [REDACTED]
with any questions or comments.

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EDR Environmental LienSearch™ Report

TARGET PROPERTY INFORMATION

ADDRESS

MAKUA
NOT REPORTED
WAIANAE, HAWAII 96792

RESEARCH SOURCE

Source 1: Honolulu Assessor
Honolulu County, Hawaii

Source 2: Honolulu Recorder
Honolulu County, Hawaii

PROPERTY INFORMATION

Deed 1:

Title is vested in: State of Hawaii

Legal Description: 1211.661 Acres

Legal Current Owner: State of Hawaii

Property Identifiers: 810010070000

Comments: Public records of Honolulu County, Hawaii were searched from January 1, 1960 to May 28, 2016, and no deeds vesting title in the subject property were found of record during the period searched.

Comment: Exhibit A

Deed 1:

Title is vested in: State of Hawaii

Legal Description: 28 Acres

Legal Current Owner: State of Hawaii

Property Identifiers: 810010080000

Comments: Public records of Honolulu County, Hawaii were searched from January 1, 1960 to May 28, 2016, and no deeds vesting title in the subject property were found of record during the period searched.

Comment: Exhibit B

EDR Environmental LienSearch™ Report

Deed 1:

Title is vested in: State of Hawaii

Legal Description: 24.14 Acres

Legal Current Owner: State of Hawaii

Property Identifiers: 820010010000

Comments: Public records of Honolulu County, Hawaii were searched from January 1, 1960 to May 28, 2016, and no deeds vesting title in the subject property were found of record during the period searched.

Comment: Exhibit C

Deed 1:

Title is vested in: Makua Protestant Church

Legal Description: 0.435 Acres

Legal Current Owner: Makua Protestant Church

Property Identifiers: 820010030000

Comments: Public records of Honolulu County, Hawaii were searched from January 1, 1960 to May 28, 2016, and no deeds vesting title in the subject property were found of record during the period searched.

Comment: Exhibit D

Deed 1:

Title is vested in: State of Hawaii

Legal Description: 7.5 Acres

Legal Current Owner: State of Hawaii

Property Identifiers: 820010220000

Comments: Public records of Honolulu County, Hawaii were searched from January 1, 1960 to May 28, 2016, and no deeds vesting title in the subject property were found of record during the period searched.

Comment: Exhibit E

EDR Environmental LienSearch™ Report

Deed 1:

Title is vested in: State of Hawaii

Legal Description: 260.466 Acres

Legal Current Owner: State of Hawaii

Property Identifiers: 820010240000

Comments: Public records of Honolulu County, Hawaii were searched from January 1, 1960 to May 28, 2016, and no deeds vesting title in the subject property were found of record during the period searched.

Comment: Exhibit F

Deed 1:

Title is vested in: State of Hawaii

Legal Description: 5.95 Acres

Legal Current Owner: State of Hawaii

Property Identifiers: 820010250000

Comments: Public records of Honolulu County, Hawaii were searched from January 1, 1960 to May 28, 2016, and no deeds vesting title in the subject property were found of record during the period searched.

Comment: Exhibit G

EDR Environmental LienSearch™ Report

ENVIRONMENTAL LIEN

Environmental Lien: Found ☐ Not Found ☒

OTHER ACTIVITY AND USE LIMITATIONS (AULs)

Other AUL's: Found ☐ Not Found ☒

EDR Environmental LienSearch™ Report

DEED EXHIBIT A-G

Previous Parcel	Next Parcel	Return to Main Search Page	Honolulu Home	Real Property Home
Owner and Parcel Information Print Owner Info				
Parcel Number	810010070000	Data current as of	May 30, 2016	
Owner Name	STATE OF HAWAII Fee Owner UNITED STATES OF AMERICA Lessee	Project Name		
Location Address	KAENA PT RD	Plat Map	Plat Map PDF	
Property Class	PRESERVATION	Parcel Map	GIS Parcel Map	
Land Area (approximate sq ft)	52,779,953	Legal Information		
Land Area (acres)	1211.661			

Assessment Information				Show Historical Assessments Print Assessment Info							
Assessment Year	Property Class	Assessed Land Value	Dedicated Use Value	Land Exemption	Net Taxable Land Value	Assessed Building Value	Building Exemption	Net Taxable Building Value	Total Property Assessed Value	Total Property Exemption	Total Net Taxable Value
2016	PRESERVATION	\$ 3,302,500	\$ 0	\$ 3,302,500	\$ 0	\$ 55,300	\$ 55,300	\$ 0	\$ 3,357,800	\$ 3,357,800	\$ 0

<p>Appeal Information Print Appeal Info</p> <p>No appeal information on parcel.</p>
--

Land Information Print Land			
Property Class	Square Footage	Acreage	Agricultural Use Indicator
PRESERVATION	43,124,400	990	
PRESERVATION	9,655,553	221.661	

Improvement Information
No improvement information available for this parcel.

Other Building and Yard Improvements			
Description	Quantity	Year Built	Area
No information associated with this parcel.			

Sales Information Print Sales Info								
Sale Date	Sale Amount	Instrument #	Instrument Type	Instrument Description	Date of Recording	Land Court Document Number	Cert #	Book/Page
03/30/2012		A-44930891	FEE CONVEYANCE	Grant of easement	04/20/2012			
04/04/1994			LEASE					

Current Tax Bill Information			2016 Tax Payments	Show Historical Taxes	Treasury				
			Division	Current Bill					
Tax Period	Description	Original Due Date	Taxes Assessment	Tax Credits	Net Tax	Penalty	Interest	Other	Amount Due
									\$ 0.00
No Tax Information available on this parcel.									

Previous Parcel	Next Parcel	Return to Main Search Page	Honolulu Home	Real Property Home
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Previous Parcel	Next Parcel	Return to Main Search Page	Honolulu Home	Real Property Home
Owner and Parcel Information Print Owner Info				
Parcel Number	810010080000		Data current as of	May 30, 2016
Owner Name	STATE OF HAWAII Fee Owner UNITED STATES OF AMERICA Lessee		Project Name	
Location Address	81-601 FARRINGTON HWY		Plat Map	Plat Map PDF
Property Class	PRESERVATION		Parcel Map	GIS Parcel Map
Land Area (approximate sq ft)	1,219,680		Legal Information	
Land Area (acres)	28			

Assessment Information Show Historical Assessments Print Assessment Info											
Assessment Year	Property Class	Assessed Land Value	Dedicated Use Value	Land Exemption	Net Taxable Land Value	Assessed Building Value	Building Exemption	Net Taxable Building Value	Total Property Assessed Value	Total Property Exemption	Total Net Taxable Value
2016	PRESERVATION	\$ 840,000	\$ 0	\$ 840,000	\$ 0	\$ 0	\$ 0	\$ 0	\$ 840,000	\$ 840,000	\$ 0

Appeal Information Print Appeal Info											
No appeal information on parcel.											

Land Information Print Land			
Property Class	Square Footage	Acreage	Agricultural Use Indicator
PRESERVATION	1,219,680	28	

Improvement Information											
No improvement information available for this parcel.											

Other Building and Yard Improvements			
Description	Quantity	Year Built	Area
No information associated with this parcel.			

Sales Information Print Sales Info								
Sale Date	Sale Amount	Instrument #	Instrument Type	Instrument Description	Date of Recording	Land Court Document Number	Cert #	Book/Page
No sales information associated with this parcel.								

Current Tax Bill Information 2016 Tax Payments Show Historical Taxes Treasury Division Current Bill										
Tax Period	Description	Original Due Date	Taxes Assessment	Tax Credits	Net Tax	Penalty	Interest	Other	Amount Due	
									\$ 0.00	
No Tax Information available on this parcel.										

Previous Parcel	Next Parcel	Return to Main Search Page	Honolulu Home	Real Property Home
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Owner and Parcel Information Print Owner Info				
Parcel Number	820010010000		Data current as of	May 30, 2016
Owner Name	STATE OF HAWAII Fee Owner UNITED STATES OF AMERICA Lessee		Project Name	
Location Address	FARRINGTON HWY		Plat Map	Plat Map PDF
Property Class	PRESERVATION		Parcel Map	GIS Parcel Map
Land Area (approximate sq ft)	1,051,538		Legal Information	
Land Area (acres)	24.14			

Assessment Information Show Historical Assessments Print Assessment Info											
Assessment Year	Property Class	Assessed Land Value	Dedicated Use Value	Land Exemption	Net Taxable Land Value	Assessed Building Value	Building Exemption	Net Taxable Building Value	Total Property Assessed Value	Total Property Exemption	Total Net Taxable Value
2016	PRESERVATION	\$ 724,200	\$ 0	\$ 724,200	\$ 0	\$ 0	\$ 0	\$ 0	\$ 724,200	\$ 724,200	\$ 0

Appeal Information Print Appeal Info											
No appeal information on parcel.											

Land Information Print Land			
Property Class	Square Footage	Acreage	Agricultural Use Indicator
PRESERVATION	1,051,538	24.14	

Improvement Information			
No improvement information available for this parcel.			

Other Building and Yard Improvements			
Description	Quantity	Year Built	Area
No information associated with this parcel.			

Sales Information Print Sales Info								
Sale Date	Sale Amount	Instrument #	Instrument Type	Instrument Description	Date of Recording	Land Court Document Number	Cert #	Book/Page
No sales information associated with this parcel.								

Current Tax Bill Information			2016 Tax Payments Division		Show Historical Taxes			Treasury Current Bill	
Tax Period	Description	Original Due Date	Taxes Assessment	Tax Credits	Net Tax	Penalty	Interest	Other	Amount Due
									\$ 0.00
No Tax Information available on this parcel.									

Previous Parcel	Next Parcel	Return to Main Search Page	Honolulu Home	Real Property Home
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Previous Parcel	Next Parcel	Return to Main Search Page	Honolulu Home	Real Property Home
Owner and Parcel Information Print Owner Info				
Parcel Number	820010030000	Data current as of	May 30, 2016	
Owner Name	MAKUA PROTESTANT CHURCH Fee Owner	Project Name		
Location Address	FARRINGTON HWY	Plat Map	Plat Map PDF	
Property Class	PRESERVATION	Parcel Map	GIS Parcel Map	
Land Area (approximate sq ft)	18,949	Legal Information		
Land Area (acres)	0.435			

Assessment Information Show Historical Assessments Print Assessment Info											
Assessment Year	Property Class	Assessed Land Value	Dedicated Use Value	Land Exemption	Net Taxable Land Value	Assessed Building Value	Building Exemption	Net Taxable Building Value	Total Property Assessed Value	Total Property Exemption	Total Net Taxable Value
2016	PRESERVATION	\$ 13,100	\$ 0	\$ 13,100	\$ 0	\$ 0	\$ 0	\$ 0	\$ 13,100	\$ 13,100	\$ 0

Appeal Information Print Appeal Info											
No appeal information on parcel.											

Land Information Print Land			
Property Class	Square Footage	Acreage	Agricultural Use Indicator
PRESERVATION	18,949	0.435	

Improvement Information											
No improvement information available for this parcel.											

Other Building and Yard Improvements			
Description	Quantity	Year Built	Area
No information associated with this parcel.			

Sales Information Print Sales Info									
Sale Date	Sale Amount	Instrument #	Instrument Type	Instrument Description	Date of Recording	Land Court Document Number	Cert #	Book/Page	
No sales information associated with this parcel.									

Current Tax Bill Information 2016 Tax Payments Division Show Historical Taxes Treasury Current Bill									
Tax Period	Description	Original Due Date	Taxes Assessment	Tax Credits	Net Tax	Penalty	Interest	Other	Amount Due
									\$ 0.00
No Tax Information available on this parcel.									

Previous Parcel	Next Parcel	Return to Main Search Page	Honolulu Home	Real Property Home
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Owner and Parcel Information Print Owner Info				
Parcel Number	820010220000		Data current as of	May 30, 2016
Owner Name	STATE OF HAWAII Fee Owner UNITED STATES OF AMERICA Lessee		Project Name	
Location Address	FARRINGTON HWY		Plat Map	Plat Map PDF
Property Class	PRESERVATION		Parcel Map	GIS Parcel Map
Land Area (approximate sq ft)	326,700		Legal Information	
Land Area (acres)	7.5			

Assessment Information Show Historical Assessments Print Assessment Info											
Assessment Year	Property Class	Assessed Land Value	Dedicated Use Value	Land Exemption	Net Taxable Land Value	Assessed Building Value	Building Exemption	Net Taxable Building Value	Total Property Assessed Value	Total Property Exemption	Total Net Taxable Value
2016	PRESERVATION	\$ 225,000	\$ 0	\$ 225,000	\$ 0	\$ 0	\$ 0	\$ 0	\$ 225,000	\$ 225,000	\$ 0

Appeal Information Print Appeal Info											
No appeal information on parcel.											

Land Information Print Land			
Property Class	Square Footage	Acreage	Agricultural Use Indicator
PRESERVATION	326,700	7.5	

Improvement Information											
No improvement information available for this parcel.											

Other Building and Yard Improvements			
Description	Quantity	Year Built	Area
No information associated with this parcel.			

Sales Information Print Sales Info								
Sale Date	Sale Amount	Instrument #	Instrument Type	Instrument Description	Date of Recording	Land Court Document Number	Cert #	Book/Page
No sales information associated with this parcel.								

Current Tax Bill Information			2016 Tax Payments Division Current Bill		Show Historical Taxes			Treasury	
Tax Period	Description	Original Due Date	Taxes Assessment	Tax Credits	Net Tax	Penalty	Interest	Other	Amount Due
									\$ 0.00
No Tax Information available on this parcel.									

Previous Parcel	Next Parcel	Return to Main Search Page	Honolulu Home	Real Property Home
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Previous Parcel	Next Parcel	Return to Main Search Page	Honolulu Home	Real Property Home
Owner and Parcel Information Print Owner Info				
Parcel Number	820010240000		Data current as of	May 30, 2016
Owner Name	STATE OF HAWAII Fee Owner UNITED STATES OF AMERICA Lessee		Project Name	
Location Address	82-180 FARRINGTON HWY		Plat Map	Plat Map PDF
Property Class	PRESERVATION		Parcel Map	GIS Parcel Map
Land Area (approximate sq ft)	11,345,899		Legal Information	
Land Area (acres)	260.466			

Assessment Information Show Historical Assessments Print Assessment Info											
Assessment Year	Property Class	Assessed Land Value	Dedicated Use Value	Land Exemption	Net Taxable Land Value	Assessed Building Value	Building Exemption	Net Taxable Building Value	Total Property Assessed Value	Total Property Exemption	Total Net Taxable Value
2016	PRESERVATION	\$ 781,400	\$ 0	\$ 781,400	\$ 0	\$ 0	\$ 0	\$ 0	\$ 781,400	\$ 781,400	\$ 0

Appeal Information Print Appeal Info											
No appeal information on parcel.											

Land Information Print Land			
Property Class	Square Footage	Acreage	Agricultural Use Indicator
PRESERVATION	11,345,899	260.466	

Improvement Information											
No improvement information available for this parcel.											

Other Building and Yard Improvements			
Description	Quantity	Year Built	Area
No information associated with this parcel.			

Sales Information Print Sales Info								
Sale Date	Sale Amount	Instrument #	Instrument Type	Instrument Description	Date of Recording	Land Court Document Number	Cert #	Book/Page
No sales information associated with this parcel.								

Current Tax Bill Information			2016 Tax Payments Division Current Bill		Show Historical Taxes			Treasury	
Tax Period	Description	Original Due Date	Taxes Assessment	Tax Credits	Net Tax	Penalty	Interest	Other	Amount Due
									\$ 0.00
No Tax Information available on this parcel.									

Previous Parcel	Next Parcel	Return to Main Search Page	Honolulu Home	Real Property Home
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Previous Parcel	Next Parcel	Return to Main Search Page	Honolulu Home	Real Property Home
Owner and Parcel Information Print Owner Info				
Parcel Number	820010250000		Data current as of	May 30, 2016
Owner Name	STATE OF HAWAII Fee Owner UNITED STATES OF AMERICA Lessee		Project Name	
Location Address	FARRINGTON HWY		Plat Map	Plat Map PDF
Property Class	PRESERVATION		Parcel Map	GIS Parcel Map
Land Area (approximate sq ft)	259,182		Legal Information	
Land Area (acres)	5.95			

Assessment Information Show Historical Assessments Print Assessment Info											
Assessment Year	Property Class	Assessed Land Value	Dedicated Use Value	Land Exemption	Net Taxable Land Value	Assessed Building Value	Building Exemption	Net Taxable Building Value	Total Property Assessed Value	Total Property Exemption	Total Net Taxable Value
2016	PRESERVATION	\$ 178,500	\$ 0	\$ 178,500	\$ 0	\$ 0	\$ 0	\$ 0	\$ 178,500	\$ 178,500	\$ 0

Appeal Information Print Appeal Info											
No appeal information on parcel.											

Land Information Print Land			
Property Class	Square Footage	Acreage	Agricultural Use Indicator
PRESERVATION	259,182	5.95	

Improvement Information											
No improvement information available for this parcel.											

Other Building and Yard Improvements			
Description	Quantity	Year Built	Area
No information associated with this parcel.			

Sales Information Print Sales Info								
Sale Date	Sale Amount	Instrument #	Instrument Type	Instrument Description	Date of Recording	Land Court Document Number	Cert #	Book/Page
No sales information associated with this parcel.								

Current Tax Bill Information			2016 Tax Payments Division		Show Historical Taxes			Treasury Current Bill	
Tax Period	Description	Original Due Date	Taxes Assessment	Tax Credits	Net Tax	Penalty	Interest	Other	Amount Due
									\$ 0.00
No Tax Information available on this parcel.									

Previous Parcel	Next Parcel	Return to Main Search Page	Honolulu Home	Real Property Home
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Makua

Waianae, HI 96792

Inquiry Number: 4575351.5w

April 06, 2016

EDR DataMap™ Well Search Report

Thank you for your business.
Please contact EDR at [REDACTED]
with any questions or comments.

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GEOCHECK VERSION 2.1 SUMMARY

FEDERAL DATABASE WELL INFORMATION

MAP ID	WELL ID
2	USGS40000271003
2	USGS40000271002
3	USGS40000270993
4	USGS40000270992
6	USGS40000270989
7	USGS40000270988
8	USGS40000270987
10	USGS40000270986
10	USGS40000270985
14	USGS40000270982
17	USGS40000270975
18	USGS40000270972
18	USGS40000270971
17	USGS40000270974
17	USGS40000270973
19	USGS40000270970
21	USGS40000270967

STATE WATER WELL INFORMATION

MAP ID	WELL ID
1	HI9000000002282
2	HI9000000002280
2	HI9000000002279
3	HI9000000002206
4	HI9000000002207
5	HI9000000002208
6	HI9000000002204
7	HI9000000002201
8	HI9000000002202
9	HI9000000002210
9	HI9000000002209
9	HI9000000002211
10	HI9000000002205
10	HI9000000002203
11	HI9000000002191
11	HI9000000002192
11	HI9000000002193
12	HI9000000002194
13	HI9000000002190
14	HI9000000002189
15	HI9000000002177
16	HI9000000002174
17	HI9000000002167
17	HI9000000002168
17	HI9000000002171
18	HI9000000002169
18	HI9000000002172
19	HI9000000002170
20	HI9000000002176
21	HI9000000002175

GEOCHECK VERSION 2.1 SUMMARY

PUBLIC WATER SUPPLY SYSTEM INFORMATION

NO WELLS FOUND

USGS TOPOGRAPHIC MAP(S)

21158-E2 KAENA, HI
21158-E3 KAENA OE W, HI

AREA RADON INFORMATION

Federal Area Radon Information for Zip Code: 96791

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	Not Reported	Not Reported	Not Reported	Not Reported
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	0.000 pCi/L	100%	0%	0%

Federal Area Radon Information for Zip Code: 96792

Number of sites tested: 5

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.300 pCi/L	100%	0%	0%
Living Area - 2nd Floor	0.200 pCi/L	100%	0%	0%
Basement	0.000 pCi/L	100%	0%	0%

Federal EPA Radon Zone for HONOLULU 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 HONOLULU COUNTY, HI

Number of sites tested: 209

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.015 pCi/L	100%	0%	0%
Living Area - 2nd Floor	0.125 pCi/L	100%	0%	0%
Basement	0.415 pCi/L	96%	4%	0%

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

Water Well Information:

Map ID:	2	Site ID:	USGS40000271003
Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-213308158142702		
Monloc name:	3-3314-02 W277-99B		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20060000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	21.5490537
Longitude:	-158.2380813	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:	174.00
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:	19620129	Welldepth:	278
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	2	Site ID:	USGS40000271002
Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-213307158142701		
Monloc name:	3-3314-01 W277-99A		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20060000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	21.5487758
Longitude:	-158.2380814	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:	183.00
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		

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

Aquifer type: Not Reported
 Construction date: 19611221 Welldepth: 264
 Welldepth units: ft Wellholedepth: Not Reported
 Wellholedepth units: Not Reported

Ground-water levels, Number of Measurements: 0

Map ID: 3
 Org. Identifier: USGS-HI Site ID: USGS40000270993
 Formal name: USGS Hawaii Water Science Center
 Monloc Identifier: USGS-213224158135901
 Monloc name: 3-3213-06 Makua US Air Force, Oahu, HI
 Monloc type: Well
 Monloc desc: former local no. W277-101
 Huc code: 20060000 Drainagearea value: Not Reported
 Drainagearea Units: Not Reported Contrib drainagearea: Not Reported
 Contrib drainagearea units: Not Reported Latitude: 21.5368311
 Longitude: -158.230305 Sourcemap scale: 24000
 Horiz Acc measure: 1 Horiz Acc measure units: seconds
 Horiz Collection method: Interpolated from map
 Horiz coord refs: NAD83 Vert measure val: 26.00
 Vert measure units: feet Vertacc measure val: 5
 Vert accmeasure units: feet
 Vertcollection method: Interpolated from topographic map
 Vert coord refs: HILOCAL Countrycode: US
 Aquifername: Hawaii volcanic-rock aquifers
 Formation type: Not Reported
 Aquifer type: Not Reported
 Construction date: 19650901 Welldepth: 36
 Welldepth units: ft Wellholedepth: 50
 Wellholedepth units: ft

Ground-water levels, Number of Measurements: 29

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2004-09-21		6.94	2004-06-07		7.04
2004-04-12		7.00	2004-03-02		6.95
2003-12-18		6.48	2003-10-21		6.66
2003-08-22		6.63	2003-06-24		6.61
2003-05-13		6.52	2003-04-01		6.47
2003-01-24		6.54	2002-11-01		6.54
2002-09-23		6.45	2002-03-12		6.39
2002-01-15		6.47	2001-11-13		6.49
2001-09-19		6.57	2001-08-09		6.55
2001-06-25		6.47	2001-04-16		6.50
2000-12-20		6.60	2000-10-18		6.68
2000-09-14		6.55	2000-07-31		6.52
2000-05-19		6.60	2000-03-16		6.71
2000-01-13		6.77	1999-11-12		6.88
1965-09-28	17.51				

GEOCHECK VERSION 2.1 **STATE DATABASE WELL INFORMATION**

Map ID:	4	Site ID:	USGS40000270992
Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-213224158135601		
Monloc name:	3-3213-07 MAKUA		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20060000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	21.5368311
Longitude:	-158.2294718	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:	59.75
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:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19870331	Welldepth:	80
Welldepth units:	ft	Wellholedepth:	80
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1987-04-13	52.95	

Map ID:	6	Site ID:	USGS40000270989
Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-213210158135501		
Monloc name:	3-3213-04 T212		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20060000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	21.5329425
Longitude:	-158.229194	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:	5.00
Vert measure units:	feet	Vertacc measure val:	2
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

Aquifer type:	Not Reported	Welldepth:	20
Construction date:	19620101	Wellholeddepth:	Not Reported
Welldepth units:	ft		
Wellholeddepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	7	Site ID:	USGS40000270988
Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-213207158135601		
Monloc name:	3-3213-01 T208		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20060000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	21.5321092
Longitude:	-158.2294719	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsyst:	NAD83	Vert measure val:	5.00
Vert measure units:	feet	Vertacc measure val:	2
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsyst:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19620101	Welldepth:	20
Welldepth units:	ft	Wellholeddepth:	Not Reported
Wellholeddepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	8	Site ID:	USGS40000270987
Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-213205158135201		
Monloc name:	3-3213-02 T209		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20060000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	21.5315537
Longitude:	-158.2283608	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsyst:	NAD83	Vert measure val:	10.00
Vert measure units:	feet	Vertacc measure val:	2
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsyst:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

Aquifer type:	Not Reported	Welldepth:	10
Construction date:	19620101	Wellholeddepth:	Not Reported
Welldepth units:	ft		
Wellholeddepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	10	Site ID:	USGS40000270986
Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-213202158135201		
Monloc name:	3-3213-05 T216		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20060000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	21.5307204
Longitude:	-158.2283608	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsyst:	NAD83	Vert measure val:	15.00
Vert measure units:	feet	Vertacc measure val:	2
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsyst:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19620101	Welldepth:	90
Welldepth units:	ft	Wellholeddepth:	Not Reported
Wellholeddepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	10	Site ID:	USGS40000270985
Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-213200158135101		
Monloc name:	3-3213-03 T210		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20060000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	21.5301649
Longitude:	-158.228083	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsyst:	NAD83	Vert measure val:	10.00
Vert measure units:	feet	Vertacc measure val:	2
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsyst:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

Aquifer type:	Not Reported	Welldepth:	20
Construction date:	19620101	Wellholeddepth:	Not Reported
Welldepth units:	ft		
Wellholeddepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	14	Site ID:	USGS40000270982
Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-213145158135201		
Monloc name:	3-3113-01 T211		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20060000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	21.5259985
Longitude:	-158.2283609	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsyst:	NAD83	Vert measure val:	20.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsyst:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19620101	Welldepth:	30
Welldepth units:	ft	Wellholeddepth:	Not Reported
Wellholeddepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	17	Site ID:	USGS40000270975
Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-213047158135001		
Monloc name:	3-3013-01 T201		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20060000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	21.5098883
Longitude:	-158.2278055	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsyst:	NAD83	Vert measure val:	10.00
Vert measure units:	feet	Vertacc measure val:	2
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsyst:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

Aquifer type:	Not Reported	Welldepth:	40
Construction date:	19620101	Wellholeddepth:	Not Reported
Welldepth units:	ft		
Wellholeddepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	18	Site ID:	USGS40000270972
Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-213045158134401		
Monloc name:	3-3013-03 T203		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20060000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	21.5093328
Longitude:	-158.2261388	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsyst:	NAD83	Vert measure val:	30.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsyst:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19620101	Welldepth:	40
Welldepth units:	ft	Wellholeddepth:	Not Reported
Wellholeddepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	18	Site ID:	USGS40000270971
Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-213045158134201		
Monloc name:	3-3013-06 T207		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20060000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	21.5093328
Longitude:	-158.2255832	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsyst:	NAD83	Vert measure val:	35.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsyst:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

Aquifer type:	Not Reported	Welldepth:	36
Construction date:	19620101	Wellholeddepth:	Not Reported
Welldepth units:	ft		
Wellholeddepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	17	Site ID:	USGS40000270974
Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-213045158135201		
Monloc name:	3-3013-02 T202		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20060000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	21.5093327
Longitude:	-158.228361	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsyst:	NAD83	Vert measure val:	8.00
Vert measure units:	feet	Vertacc measure val:	2
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsyst:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19620101	Welldepth:	90
Welldepth units:	ft	Wellholeddepth:	Not Reported
Wellholeddepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	17	Site ID:	USGS40000270973
Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-213045158135001		
Monloc name:	3-3013-05 T205		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20060000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	21.5093327
Longitude:	-158.2278055	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsyst:	NAD83	Vert measure val:	20.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsyst:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

Aquifer type:	Not Reported	Welldepth:	60
Construction date:	19620101	Wellholeddepth:	Not Reported
Welldepth units:	ft		
Wellholeddepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	19	Site ID:	USGS40000270970
Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-213044158134701		
Monloc name:	3-3013-04 T204		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20060000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	21.509055
Longitude:	-158.2269722	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsyz:	NAD83	Vert measure val:	25.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsyz:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19620101	Welldepth:	40
Welldepth units:	ft	Wellholeddepth:	Not Reported
Wellholeddepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID:	21	Site ID:	USGS40000270967
Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-213023158133301		
Monloc name:	3-3013-09		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20060000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	21.5032221
Longitude:	-158.2230832	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsyz:	NAD83	Vert measure val:	186.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsyz:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		

GEOCHECK VERSION 2.1
STATE DATABASE WELL INFORMATION

Aquifer type:	Not Reported	Welldepth:	235
Construction date:	19730312	Wellholeddepth:	Not Reported
Welldepth units:	ft		
Wellholeddepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

Water Well Information:

Map ID:	1		
Wid:	3-3314-004	Island:	Oahu
Well name:	Keawaula Bay	Old name:	Not Reported
Yr drilled:	1979		
Driller:	Not Reported		
Quad map:	1		
Long83dd:	-158.246667		
Lat83dd:	21.554167		
Gps:	0	Utm:	-1
Owner user:	Division of State Parks Oahu, DLNR-SP		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	DUG
Casing dia:	Not Reported	Ground el:	Not Reported
Well depth:	21		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	MUN - State		
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:	120		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	Not Reported		
Pump yr:	2003		
Draft yr:	Not Reported	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	.173		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	14	Tmk:	(1) 8-1-001:007
Aqui code:	30305		
Latest hd:	Not Reported	Wcr:	01-JAN-79
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000002282

Map ID:	2		
Wid:	3-3314-002	Island:	Oahu
Well name:	AT&T 2	Old name:	Not Reported
Yr drilled:	1962		
Driller:	Layne International		
Quad map:	1		
Long83dd:	-158.238056		
Lat83dd:	21.548889		
Gps:	0	Utm:	-1
Owner user:	AT&T		
Land owner:	Not Reported		

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

Pump insta:	Not Reported	Well type:	Not Reported
Old number:	277-99B	Ground el:	174
Casing dia:	8		
Well depth:	278	Perf case:	Not Reported
Solid case:	200		
Use:	IRR - Landscape/Water Features		
Use year:	Not Reported		
Init head:	4.6	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	340		
Test date:	1/22/1962	Test gpm:	141
Test ddown:	12.3	Test chlor:	335
Test temp:	24.1	Test unit:	C
Pump gpm:	80		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	Not Reported		
Pump yr:	1989		
Draft yr:	Not Reported	Bot hole:	-104
Bot solid:	-26	Bot perf:	Not Reported
Spec capac:	11		
Pump mgd:	.115		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Trnk:	(1) 8-1-001:023
Aqui code:	30305		
Latest hd:	Not Reported	Wcr:	01-JAN-62
Pir:	Not Reported		
Surveyor:	W. Thompson		
T:	Not Reported	Site id:	HI9000000002280

Map ID:	2		
Wid:	3-3314-001	Island:	Oahu
Well name:	AT&T 1	Old name:	Not Reported
Yr drilled:	1961		
Driller:	Layne International		
Quad map:	1		
Long83dd:	██████		
Lat83dd:	21.548889		
Gps:	0	Utm:	-1
Owner user:	AT&T		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	277-99A	Well type:	Not Reported
Casing dia:	8	Ground el:	152
Well depth:	232		
Solid case:	172	Perf case:	Not Reported
Use:	IRR - Landscape/Water Features		
Use year:	Not Reported		
Init head:	5.03	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	335		
Test date:	12/21/1961	Test gpm:	152

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

Test ddown:	4.6	Test chlor:	280
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	80		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	TWDC		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-80
Bot solid:	-20	Bot perf:	Not Reported
Spec capac:	33		
Pump mgd:	.115		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(1) 8-1-001:023
Aqui code:	30305		
Latest hd:	Not Reported	Wcr:	01-DEC-61
Pir:	4/6/1989		
Surveyor:	W. Thompson		
T:	Not Reported	Site id:	HI9000000002279

Map ID:	3	Island:	Oahu
Wid:	3-3213-006	Old name:	Not Reported
Well name:	Makua		
Yr drilled:	1965		
Driller:	Samson & Zerbe		
Quad map:	1		
Long83dd:	-158.230278		
Lat83dd:	21.537222		
Gps:	0	Utm:	-1
Owner user:	Page Communications, Inc.		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	277-101	Well type:	Not Reported
Casing dia:	6	Ground el:	26
Well depth:	36		
Solid case:	21	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:	27	Test unit:	C
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	TWDC		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-10
Bot solid:	5	Bot perf:	Not Reported
Spec capac:	Not Reported		

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

Pump mgd:	0	Pump elev:	Not Reported
Draft mgd:	Not Reported	Tmk:	(1) 8-1-001:019
Pump depth:	Not Reported		
Aqui code:	30305	Wcr:	01-JAN-65
Latest hd:	Not Reported		
Pir:	Not Reported		
Surveyor:	Not Reported	Site id:	HI9000000002206
T:	Not Reported		

Map ID:	4	Island:	Oahu
Wid:	3-3213-007	Old name:	Not Reported
Well name:	Makua		
Yr drilled:	1987		
Driller:	Roscoe Moss Hawaii Inc		
Quad map:	1		
Long83dd:	-158.229444		
Lat83dd:	21.536944		
Gps:	0	Utm:	-1
Owner user:	Division of State Parks Oahu, DLNR-SP		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	PER
Casing dia:	8	Ground el:	60
Well depth:	80		
Solid case:	55	Perf case:	65
Use:	UNU - Unused		
Use year:	Not Reported		
Init head:	6.9	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	165		
Test date:	4/13/1987	Test gpm:	100
Test ddown:	4.2	Test chlor:	175
Test temp:	23.3	Test unit:	C
Pump gpm:	100		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	TWDC		
Pump yr:	1988		
Draft yr:	Not Reported	Bot hole:	-20
Bot solid:	5	Bot perf:	-5
Spec capac:	24		
Pump mgd:	.144		
Draft mgd:	Not Reported	Pump elev:	-7
Pump depth:	67	Tmk:	(1) 8-1-001:007
Aqui code:	30305		
Latest hd:	Not Reported	Wcr:	01-MAY-87
Pir:	1/1/1988		
Surveyor:	Park Engineering	Site id:	HI9000000002207
T:	Not Reported		

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

Map ID:	5		
Wid:	3-3213-008	Island:	Oahu
Well name:	ERDC-MW-2	Old name:	Not Reported
Yr drilled:	2002		
Driller:	Valley Well Drilling, LLC		
Quad map:	1		
Long83dd:	-158.228333		
Lat83dd:	21.534444		
Gps:	-1	Utm:	0
Owner user:	Jon Fukuda (Directorate of Public Works, Environmental Div., DPW, U.S. Army Garrison)		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	ROT
Casing dia:	4	Ground el:	11
Well depth:	35		
Solid case:	6	Perf case:	35
Use:	OBS - Observation		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	231		
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:	PA		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-24
Bot solid:	5	Bot perf:	-24
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(1) 8-2-001:002
Aqui code:	30305		
Latest hd:	Not Reported	Wcr:	30-DEC-99
Pir:	Not Reported		
Surveyor:	Ryan Suzuki (R.M. Towill Corporation)		
T:	Not Reported	Site id:	HI9000000002208

Map ID:	6		
Wid:	3-3213-004	Island:	Oahu
Well name:	Makua	Old name:	Not Reported
Yr drilled:	1962		
Driller:	Goodfellow Construction, Inc. Corporate		
Quad map:	1		
Long83dd:	-158.229167		
Lat83dd:	21.533056		
Gps:	0	Utm:	-1
Owner user:	Pacific Islands Water Science Center, USGS, U.S. Geological Survey		
Land owner:	Not Reported		

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

Pump insta:	Not Reported	Well type:	Not Reported
Old number:	T212-	Ground el:	5
Casing dia:	Not Reported		
Well depth:	20	Perf case:	Not Reported
Solid case:	Not Reported		
Use:	Not Reported		
Use year:	Not Reported	Init head2:	Not Reported
Init head:	Not Reported		
Init head3:	Not Reported		
Init cl:	37		
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:	RS		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-15
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	Trnk:	(1) 8-2-001:022
Aqui code:	30305		
Latest hd:	Not Reported	Wcr:	01-JAN-62
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000002204

Map ID:	7		
Wid:	3-3213-001	Island:	Oahu
Well name:	Makua	Old name:	Not Reported
Yr drilled:	1962		
Driller:	Goodfellow Construction, Inc. Corporate		
Quad map:	1		
Long83dd:	-158.229444		
Lat83dd:	21.532222		
Gps:	0	Utm:	-1
Owner user:	Pacific Islands Water Science Center, USGS, U.S. Geological Survey		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	T208-	Well type:	Not Reported
Casing dia:	Not Reported	Ground el:	5
Well depth:	20		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	ABN - Lost		
Use year:	Not Reported		
Init head:	18	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	225		
Test date:	Not Reported	Test gpm:	Not Reported

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

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:	RS		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-15
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:	(1) 8-2-001:022
Aqui code:	30305		
Latest hd:	Not Reported	Wcr:	01-JAN-62
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000002201

Map ID:	8		
Wid:	3-3213-002	Island:	Oahu
Well name:	Makua	Old name:	Not Reported
Yr drilled:	1962		
Driller:	Goodfellow Construction, Inc. Corporate		
Quad map:	1		
Long83dd:	-158.228333		
Lat83dd:	21.531667		
Gps:	0	Utm:	-1
Owner user:	Pacific Islands Water Science Center, USGS, U.S. Geological Survey		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	T209-	Well type:	Not Reported
Casing dia:	Not Reported	Ground el:	10
Well depth:	10		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	ABN - Sealed		
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:	RA		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	0
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

Pump mgd:	0	Pump elev:	Not Reported
Draft mgd:	Not Reported	Tmk:	(1) 8-2-001:022
Pump depth:	Not Reported		
Aqui code:	30305		
Latest hd:	Not Reported	Wcr:	01-JAN-62
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000002202

Map ID:	9		
Wid:	3-3213-010	Island:	Oahu
Well name:	ERDC-MW-3B	Old name:	Not Reported
Yr drilled:	2002		
Driller:	Valley Well Drilling, LLC		
Quad map:	1		
Long83dd:	-158.226667		
Lat83dd:	21.531111		
Gps:	-1	Utm:	0
Owner user:	Jon Fukuda (Directorate of Public Works, Environmental Div., DPW, U.S. Army Garrison)		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	ROT
Casing dia:	4	Ground el:	18
Well depth:	70		
Solid case:	42	Perf case:	67
Use:	OBS - Observation		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	39		
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:	PA		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-52
Bot solid:	-24	Bot perf:	-49
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(1) 8-1-001:001
Aqui code:	30305		
Latest hd:	Not Reported	Wcr:	30-DEC-99
Pir:	Not Reported		
Surveyor:	Ryan Suzuki (R.M. Towill Corporation)		
T:	Not Reported	Site id:	HI9000000002210

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

Map ID:	9		
Wid:	3-3213-009	Island:	Oahu
Well name:	ERDC-MW-3A	Old name:	Not Reported
Yr drilled:	2002		
Driller:	Valley Well Drilling, LLC		
Quad map:	1		
Long83dd:	-158.226667		
Lat83dd:	21.531111		
Gps:	-1	Utm:	0
Owner user:	Jon Fukuda (Directorate of Public Works, Environmental Div., DPW, U.S. Army Garrison)		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	ROT
Casing dia:	4	Ground el:	19
Well depth:	45		
Solid case:	15	Perf case:	45
Use:	OBS - Observation		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	55		
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:	PA		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-26
Bot solid:	4	Bot perf:	-26
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(1) 8-1-001:001
Aqui code:	30305		
Latest hd:	Not Reported	Wcr:	30-DEC-99
Pir:	Not Reported		
Surveyor:	Ryan Suzuki (R.M. Towill Corporation)		
T:	Not Reported	Site id:	HI9000000002209

Map ID:	9		
Wid:	3-3213-011	Island:	Oahu
Well name:	ERDC-MW-3C	Old name:	Not Reported
Yr drilled:	2002		
Driller:	Valley Well Drilling, LLC		
Quad map:	1		
Long83dd:	-158.226667		
Lat83dd:	21.531111		
Gps:	-1	Utm:	0
Owner user:	Jon Fukuda (Directorate of Public Works, Environmental Div., DPW, U.S. Army Garrison)		
Land owner:	Not Reported		

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

Pump insta:	Not Reported	Well type:	ROT
Old number:	Not Reported	Ground el:	19
Casing dia:	4		
Well depth:	106	Perf case:	100
Solid case:	70		
Use:	UNU - Unused		
Use year:	Not Reported	Init head2:	Not Reported
Init head:	Not Reported		
Init head3:	Not Reported		
Init cl:	57	Test gpm:	Not Reported
Test date:	Not Reported	Test chlor:	Not Reported
Test ddown:	Not Reported	Test unit:	Not Reported
Test temp:	Not Reported		
Pump gpm:	0	Head feet:	Not Reported
Draft mgy:	Not Reported	Min chlor:	Not Reported
Max chlor:	Not Reported		
Geology:	PA		
Pump yr:	0	Bot hole:	-87
Draft yr:	Not Reported	Bot perf:	-81
Bot solid:	-51		
Spec capac:	Not Reported		
Pump mgd:	0	Pump elev:	Not Reported
Draft mgd:	Not Reported	Tmk:	(1) 8-1-001:001
Pump depth:	Not Reported		
Aqui code:	30305	Wcr:	30-DEC-99
Latest hd:	Not Reported		
Pir:	Not Reported		
Surveyor:	Ryan Suzuki (R.M. Towill Corporation)		
T:	Not Reported	Site id:	HI9000000002211

Map ID:	10	Island:	Oahu
Wid:	3-3213-005	Old name:	Not Reported
Well name:	Makua		
Yr drilled:	1962		
Driller:	Goodfellow Construction, Inc. Corporate		
Quad map:	1		
Long83dd:	-158.228333	Utm:	-1
Lat83dd:	21.530833		
Gps:	0		
Owner user:	Pacific Islands Water Science Center, USGS, U.S. Geological Survey		
Land owner:	Not Reported		
Pump insta:	Not Reported	Well type:	Not Reported
Old number:	T216-	Ground el:	15
Casing dia:	Not Reported		
Well depth:	90	Perf case:	Not Reported
Solid case:	Not Reported		
Use:	Not Reported		
Use year:	Not Reported	Init head2:	Not Reported
Init head:	Not Reported		
Init head3:	Not Reported		
Init cl:	0	Test gpm:	Not Reported
Test date:	Not Reported		

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

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:	RA		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-75
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:	(1) 8-2-001:022
Aqui code:	30305		
Latest hd:	Not Reported	Wcr:	01-JAN-62
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000002205

Map ID:	10		
Wid:	3-3213-003	Island:	Oahu
Well name:	Makua	Old name:	Not Reported
Yr drilled:	1962		
Driller:	Goodfellow Construction, Inc. Corporate		
Quad map:	1		
Long83dd:	-158.228056		
Lat83dd:	21.530278		
Gps:	0	Utm:	-1
Owner user:	Pacific Islands Water Science Center, USGS, U.S. Geological Survey		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	T210-	Well type:	Not Reported
Casing dia:	Not Reported	Ground el:	10
Well depth:	20		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	ABN - Lost		
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:	RA		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-10
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

Pump mgd:	0	Pump elev:	Not Reported
Draft mgd:	Not Reported	Tmk:	(1) 8-2-001:022
Pump depth:	Not Reported		
Aqui code:	30305		
Latest hd:	Not Reported	Wcr:	01-JAN-62
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000002203

Map ID:	11		
Wid:	3-3113-003	Island:	Oahu
Well name:	ERDC-MW-4A	Old name:	Not Reported
Yr drilled:	2002		
Driller:	Valley Well Drilling, LLC		
Quad map:	1		
Long83dd:	-158.226111		
Lat83dd:	21.528889		
Gps:	-1	Utm:	0
Owner user:	Jon Fukuda (Directorate of Public Works, Environmental Div., DPW, U.S. Army Garrison)		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	ROT
Casing dia:	4	Ground el:	19
Well depth:	45		
Solid case:	15	Perf case:	45
Use:	UNU - Unused		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	186		
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:	RA		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-26
Bot solid:	4	Bot perf:	-26
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(1) 8-2-001:024
Aqui code:	30305		
Latest hd:	Not Reported	Wcr:	30-DEC-99
Pir:	Not Reported		
Surveyor:	Ryan Suzuki (R.M. Towill Corporation)		
T:	Not Reported	Site id:	HI9000000002191

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

Map ID:	11	Island:	Oahu
Wid:	3-3113-004	Old name:	Not Reported
Well name:	ERDC-MW-4B		
Yr drilled:	2002		
Driller:	Valley Well Drilling, LLC		
Quad map:	1		
Long83dd:	-158.226111		
Lat83dd:	21.528889		
Gps:	-1	Utm:	0
Owner user:	Jon Fukuda (Directorate of Public Works, Environmental Div., DPW, U.S. Army Garrison)		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	ROT
Casing dia:	4	Ground el:	19
Well depth:	70		
Solid case:	45	Perf case:	70
Use:	UNU - Unused		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	168		
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:	RA		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-51
Bot solid:	-26	Bot perf:	-51
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(1) 8-2-001:024
Aqui code:	30305		
Latest hd:	Not Reported	Wcr:	30-DEC-99
Pir:	Not Reported		
Surveyor:	Ryan Suzuki (R.M. Towill Corporation)		
T:	Not Reported	Site id:	HI9000000002192

Map ID:	11	Island:	Oahu
Wid:	3-3113-005	Old name:	Not Reported
Well name:	ERDC-MW-4C		
Yr drilled:	2002		
Driller:	Valley Well Drilling, LLC		
Quad map:	1		
Long83dd:	-158.226111		
Lat83dd:	21.528889		
Gps:	-1	Utm:	0
Owner user:	Jon Fukuda (Directorate of Public Works, Environmental Div., DPW, U.S. Army Garrison)		
Land owner:	Not Reported		

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

Pump insta:	Not Reported	Well type:	ROT
Old number:	Not Reported	Ground el:	20
Casing dia:	4		
Well depth:	100	Perf case:	100
Solid case:	70		
Use:	UNU - Unused		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	180		
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:	RA		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-80
Bot solid:	-50	Bot perf:	-80
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Trmk:	(1) 8-2-001:024
Aqui code:	30305		
Latest hd:	Not Reported	Wcr:	30-DEC-99
Pir:	Not Reported		
Surveyor:	Ryan Suzuki (R.M. Towill Corporation)		
T:	Not Reported	Site id:	HI9000000002193

Map ID:	12		
Wid:	3-3113-006	Island:	Oahu
Well name:	ERDC-MW-5	Old name:	Not Reported
Yr drilled:	2002		
Driller:	Valley Well Drilling, LLC		
Quad map:	1		
Long83dd:	-158.211944		
Lat83dd:	21.528333		
Gps:	-1	Utm:	0
Owner user:	Jon Fukuda (Directorate of Public Works, Environmental Div., DPW, U.S. Army Garrison)		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	ROT
Casing dia:	4	Ground el:	235
Well depth:	320		
Solid case:	215	Perf case:	320
Use:	UNU - Unused		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	152		
Test date:	Not Reported	Test gpm:	Not Reported

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

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:	PW		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-85
Bot solid:	20	Bot perf:	-85
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(1) 8-2-001:020
Aqui code:	30305		
Latest hd:	Not Reported	Wcr:	30-DEC-99
Pir:	Not Reported		
Surveyor:	Ryan Suzuki (R.M. Towill Corporation)		
T:	Not Reported	Site id:	HI9000000002194

Map ID:	13		
Wid:	3-3113-002	Island:	Oahu
Well name:	ERDC-MW-1	Old name:	Not Reported
Yr drilled:	2002		
Driller:	Valley Well Drilling, LLC		
Quad map:	1		
Long83dd:	-158.227222		
Lat83dd:	21.526944		
Gps:	-1	Utm:	0
Owner user:	Jon Fukuda (Directorate of Public Works, Environmental Div., DPW, U.S. Army Garrison)		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	ROT
Casing dia:	4	Ground el:	10
Well depth:	35		
Solid case:	6	Perf case:	35
Use:	OBS - Observation		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	188		
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:	PA		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-25
Bot solid:	4	Bot perf:	-25
Spec capac:	Not Reported		

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

Pump mgd:	0	Pump elev:	Not Reported
Draft mgd:	Not Reported	Tmk:	(1) 8-2-001:024
Pump depth:	Not Reported		
Aqui code:	30305		
Latest hd:	Not Reported	Wcr:	30-DEC-99
Pir:	Not Reported		
Surveyor:	Ryan Suzuki (R.M. Towill Corporation)		
T:	Not Reported	Site id:	HI9000000002190

Map ID:	14		
Wid:	3-3113-001	Island:	Oahu
Well name:	Makua	Old name:	Not Reported
Yr drilled:	1962		
Driller:	Goodfellow Construction, Inc. Corporate		
Quad map:	1		
Long83dd:	-158.228333		
Lat83dd:	21.526111		
Gps:	0	Utm:	-1
Owner user:	Pacific Islands Water Science Center, USGS, U.S. Geological Survey		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	T211-	Well type:	Not Reported
Casing dia:	Not Reported	Ground el:	20
Well depth:	30		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	ABN - Lost		
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:	QLS		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-10
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:	(1) 8-2-001:001
Aqui code:	30305		
Latest hd:	Not Reported	Wcr:	01-JAN-62
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000002189

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

Map ID:	15	Island:	Oahu
Wid:	3-3013-011	Old name:	Not Reported
Well name:	Silva A Dug		
Yr drilled:	0		
Driller:	Not Reported		
Quad map:	1		
Long83dd:	-158.226389		
Lat83dd:	21.510833		
Gps:	0	Utm:	-1
Owner user:	Albert Silva (Ohikilolo Makua Ranch)		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	DUG
Casing dia:	Not Reported	Ground el:	Not Reported
Well depth:	30		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	UNU - Unused		
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:	Not Reported		
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:	(1) 8-3-001:013
Aqui code:	30305		
Latest hd:	Not Reported	Wcr:	30-DEC-99
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000002177

Map ID:	16	Island:	Oahu
Wid:	3-3013-008	Old name:	Not Reported
Well name:	Ohikilolo		
Yr drilled:	1962		
Driller:	Goodfellow Construction, Inc. Corporate		
Quad map:	1		
Long83dd:	-158.229167		
Lat83dd:	21.51		
Gps:	0	Utm:	-1
Owner user:	Pacific Islands Water Science Center, USGS, U.S. Geological Survey		
Land owner:	Not Reported		

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

Pump insta:	Not Reported	Well type:	Not Reported
Old number:	T206-	Ground el:	5
Casing dia:	Not Reported		
Well depth:	15	Perf case:	Not Reported
Solid case:	Not Reported		
Use:	ABN - Lost		
Use year:	Not Reported	Init head2:	Not Reported
Init head:	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:	RS		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-10
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	Trnk:	(1) 8-2-001:001
Aqui code:	30305		
Latest hd:	Not Reported	Wcr:	01-JAN-62
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000002174

Map ID:	17		
Wid:	3-3013-001	Island:	Oahu
Well name:	Ohikilolo	Old name:	Not Reported
Yr drilled:	1962		
Driller:	Goodfellow Construction, Inc. Corporate		
Quad map:	1		
Long83dd:	-158.227778		
Lat83dd:	21.51		
Gps:	0	Utm:	-1
Owner user:	Pacific Islands Water Science Center, USGS, U.S. Geological Survey		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	T201-	Well type:	Not Reported
Casing dia:	Not Reported	Ground el:	10
Well depth:	40		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	ABN - Lost		
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

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

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:	RA		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-30
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:	(1) 8-2-001:024
Aqui code:	30305		
Latest hd:	Not Reported	Wcr:	01-JAN-62
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000002167

Map ID:	17		
Wid:	3-3013-002	Island:	Oahu
Well name:	Ohikilolo	Old name:	Not Reported
Yr drilled:	1962		
Driller:	Goodfellow Construction, Inc. Corporate		
Quad map:	1		
Long83dd:	-158.228333		
Lat83dd:	21.509444		
Gps:	0	Utm:	-1
Owner user:	Pacific Islands Water Science Center, USGS, U.S. Geological Survey		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	T202-	Well type:	Not Reported
Casing dia:	Not Reported	Ground el:	8
Well depth:	90		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	ABN - Lost		
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:	RA		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-82
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

Pump mgd:	0	Pump elev:	Not Reported
Draft mgd:	Not Reported	Tmk:	(1) 8-2-001:024
Pump depth:	Not Reported		
Aqui code:	30305	Wcr:	01-JAN-62
Latest hd:	Not Reported		
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000002168

Map ID:	17		
Wid:	3-3013-005	Island:	Oahu
Well name:	Ohikilolo	Old name:	Not Reported
Yr drilled:	1962		
Driller:	Goodfellow Construction, Inc. Corporate		
Quad map:	1		
Long83dd:	-158.227778		
Lat83dd:	21.509444		
Gps:	0	Utm:	-1
Owner user:	Pacific Islands Water Science Center, USGS, U.S. Geological Survey		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	T205-	Well type:	Not Reported
Casing dia:	Not Reported	Ground el:	20
Well depth:	60		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	ABN - Lost		
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:	RA		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-40
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:	(1) 8-2-001:024
Aqui code:	30305	Wcr:	01-JAN-62
Latest hd:	Not Reported		
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000002171

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

Map ID:	18		
Wid:	3-3013-003	Island:	Oahu
Well name:	Ohikilolo	Old name:	Not Reported
Yr drilled:	1962		
Driller:	Goodfellow Construction, Inc. Corporate		
Quad map:	1		
Long83dd:	-158.226111		
Lat83dd:	21.509444		
Gps:	0	Utm:	-1
Owner user:	Pacific Islands Water Science Center, USGS, U.S. Geological Survey		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	T203-	Well type:	Not Reported
Casing dia:	Not Reported	Ground el:	30
Well depth:	40		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	ABN - Lost		
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:	RA		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-10
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:	(1) 8-2-001:024
Aqui code:	30305		
Latest hd:	Not Reported	Wcr:	01-JAN-62
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000002169

Map ID:	18		
Wid:	3-3013-006	Island:	Oahu
Well name:	Ohikilolo	Old name:	Not Reported
Yr drilled:	1962		
Driller:	Goodfellow Construction, Inc. Corporate		
Quad map:	1		
Long83dd:	-158.225556		
Lat83dd:	21.509444		
Gps:	0	Utm:	-1
Owner user:	Pacific Islands Water Science Center, USGS, U.S. Geological Survey		
Land owner:	Not Reported		

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

Pump insta:	Not Reported	Well type:	Not Reported
Old number:	T207-	Ground el:	35
Casing dia:	Not Reported		
Well depth:	36	Perf case:	Not Reported
Solid case:	Not Reported		
Use:	ABN - Lost		
Use year:	Not Reported	Init head2:	Not Reported
Init head:	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:	RA		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-1
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	Trnk:	(1) 8-2-001:024
Aqui code:	30305		
Latest hd:	Not Reported	Wcr:	01-JAN-62
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000002172

Map ID:	19		
Wid:	3-3013-004	Island:	Oahu
Well name:	Ohikilolo	Old name:	Not Reported
Yr drilled:	1962		
Driller:	Goodfellow Construction, Inc. Corporate		
Quad map:	1		
Long83dd:	-158.226944		
Lat83dd:	21.509167		
Gps:	0	Utm:	-1
Owner user:	Pacific Islands Water Science Center, USGS, U.S. Geological Survey		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	T204-	Well type:	Not Reported
Casing dia:	Not Reported	Ground el:	25
Well depth:	40		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	ABN - Lost		
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

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

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:	RA		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-15
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:	(1) 8-2-001:024
Aqui code:	30305		
Latest hd:	Not Reported	Wcr:	01-JAN-62
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000002170

Map ID:	20		
Wid:	3-3013-010	Island:	Oahu
Well name:	Ohikilolo-Silva	Old name:	Not Reported
Yr drilled:	0		
Driller:	Not Reported		
Quad map:	1		
Long83dd:	-158.222222		
Lat83dd:	21.506944		
Gps:	0	Utm:	-1
Owner user:	Saburo Kamata (Goodsill Anderson Quinn & Stifel)		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	Not Reported
Casing dia:	Not Reported	Ground el:	Not Reported
Well depth:	124		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	DOM - Single and Multi Low-Rise and High-Rise Household		
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:	Not Reported		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		

GEOCHECK VERSION 2.1

STATE DATABASE WELL INFORMATION

Pump mgd:	0	Pump elev:	Not Reported
Draft mgd:	Not Reported	Tmk:	(1) 8-3-001:006
Pump depth:	Not Reported		
Aqui code:	30305		
Latest hd:	Not Reported	Wcr:	30-DEC-99
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000002176

Map ID:	21		
Wid:	3-3013-009	Island:	Oahu
Well name:	Ohikilolo	Old name:	Not Reported
Yr drilled:	1973		
Driller:	Our Lady of Keaau		
Quad map:	1		
Long83dd:	-158.223056		
Lat83dd:	21.503611		
Gps:	0	Utm:	-1
Owner user:	Our Lady of Keaau		
Land owner:	Our Lady of Keaau		
Pump insta:	Tracie Sober (Valley Well Drilling, LLC)		
Old number:	Not Reported	Well type:	PER
Casing dia:	8	Ground el:	186
Well depth:	235		
Solid case:	170	Perf case:	210
Use:	IRR - Landscape/Water Features		
Use year:	Not Reported		
Init head:	2	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	1060		
Test date:	4/18/1973	Test gpm:	75
Test ddown:	25	Test chlor:	2000
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	15.5		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	TWB		
Pump yr:	2009		
Draft yr:	Not Reported	Bot hole:	-49
Bot solid:	16	Bot perf:	-24
Spec capac:	3		
Pump mgd:	.02		
Draft mgd:	Not Reported	Pump elev:	-14
Pump depth:	200	Tmk:	(1) 8-3-001:004
Aqui code:	30305		
Latest hd:	Not Reported	Wcr:	01-APR-73
Pir:	12/28/2009		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000002175

HAWAII GOVERNMENT WELL RECORDS SEARCHED

PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: [REDACTED]

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: [REDACTED]

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 Wetlands Data: Wetlands Inventory

Source: Office of Planning

Telephone: [REDACTED]

Well Index Database

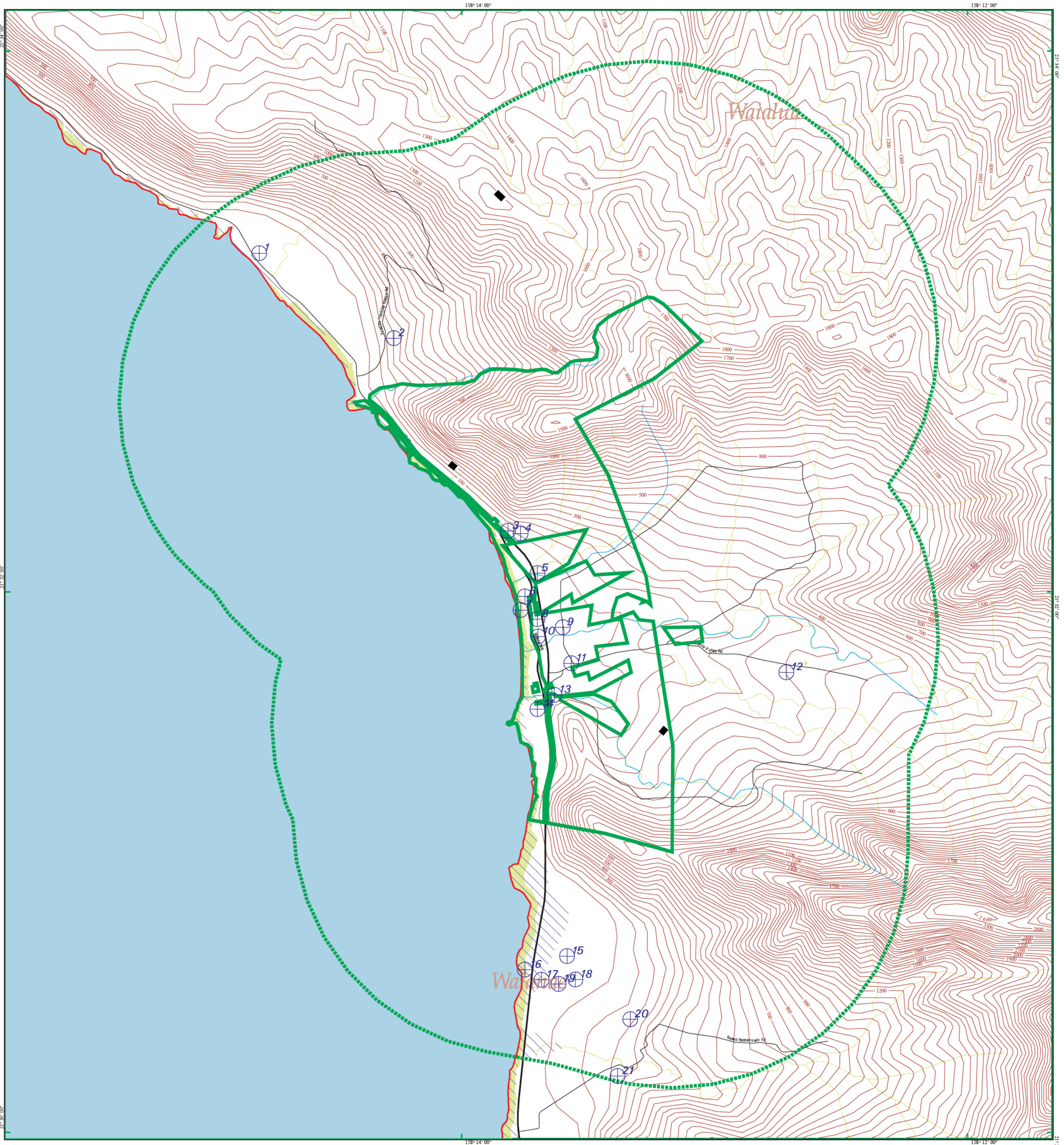
Source: Commission on Water Resource Management

Telephone: [REDACTED]

CWRM maintains a Well Index Database to track specific information pertaining to the construction and installation of production wells in Hawaii

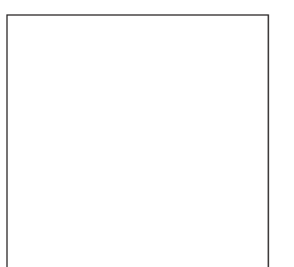
STREET AND ADDRESS INFORMATION

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EDR DataMap® - Well Search

Makua



Waianae, HI

- | | | |
|--------------------|---------------|--------------------|
| Listed Water Wells | Waterways | Water |
| Study Boundary | Railroads | Superfund Sites |
| Roads | Contour Lines | 100-Yr Flood Zones |
| Major Roads | Fault Lines | Wetlands |



0 1/4 1/2
Scale in Miles

APPENDIX B – MĀKUA ENVIRONMENTAL REPORTS



FINAL HISTORICAL RECORDS REVIEW

**Makua Military Reservation
Oahu, Hawaii**

January 2007



U.S. Army
Corps of Engineers





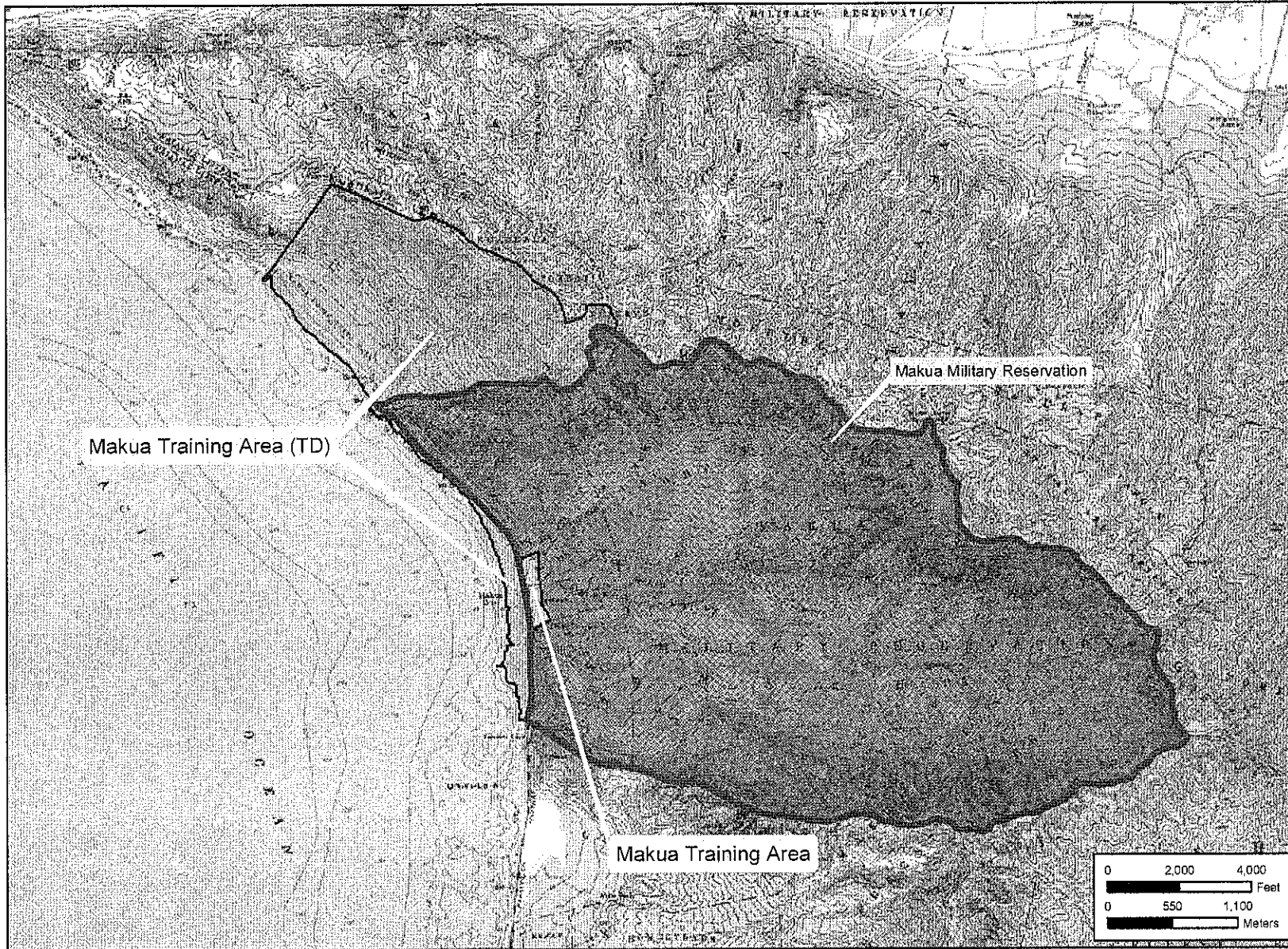
Historical Records Review Makua Military Reservation, HI



Figure 2-2
Phase 3 Range
Inventory Map

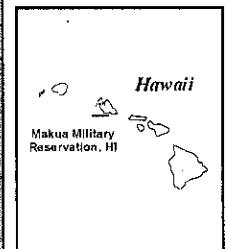
Legend

- ✓ Roads
- Contour Elevation
(40 ft Intervals)
- Streams
- Water Bodies
- Forest
- Installation
Boundary
- Operational Range
Area
- Phase 3 Inventory
 - Closed
 - Transferred



Edition: Final Report

Date: January 2007



REMEDIAL INVESTIGATION REPORT
Makua Training Area (TD) (MAKU-002-R-01) and
Beach Assault Training Area (MAKU-003-R-01)
Oahu, Hawaii

ACSIM IDIQ

Contract Number: W91ZLK-05-D-0017

Task Order: 0007

Final

Document Control Number ACA07-086-H

Prepared for
Mission and Installation Contracting Compound

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

and


U.S. Army Garrison – Hawaii

[REDACTED]
[REDACTED]
[REDACTED]

Prepared by

[REDACTED]
[REDACTED]
[REDACTED]

APPROVALS AND CONCURRENCES:

<u>[REDACTED]</u>		<u>1-Nov-11</u>
Project Manager, Shaw Environmental, Inc.		Date
<u>[REDACTED]</u>		<u>11/1/11</u>
Technical Manager, Shaw Environmental, Inc.		Date
<u>[REDACTED]</u>		<u>11/1/2011</u>
Quality Control Manager, Shaw Environmental, Inc.		Date

578000

580000

582000

584000

586000

2386000

2384000

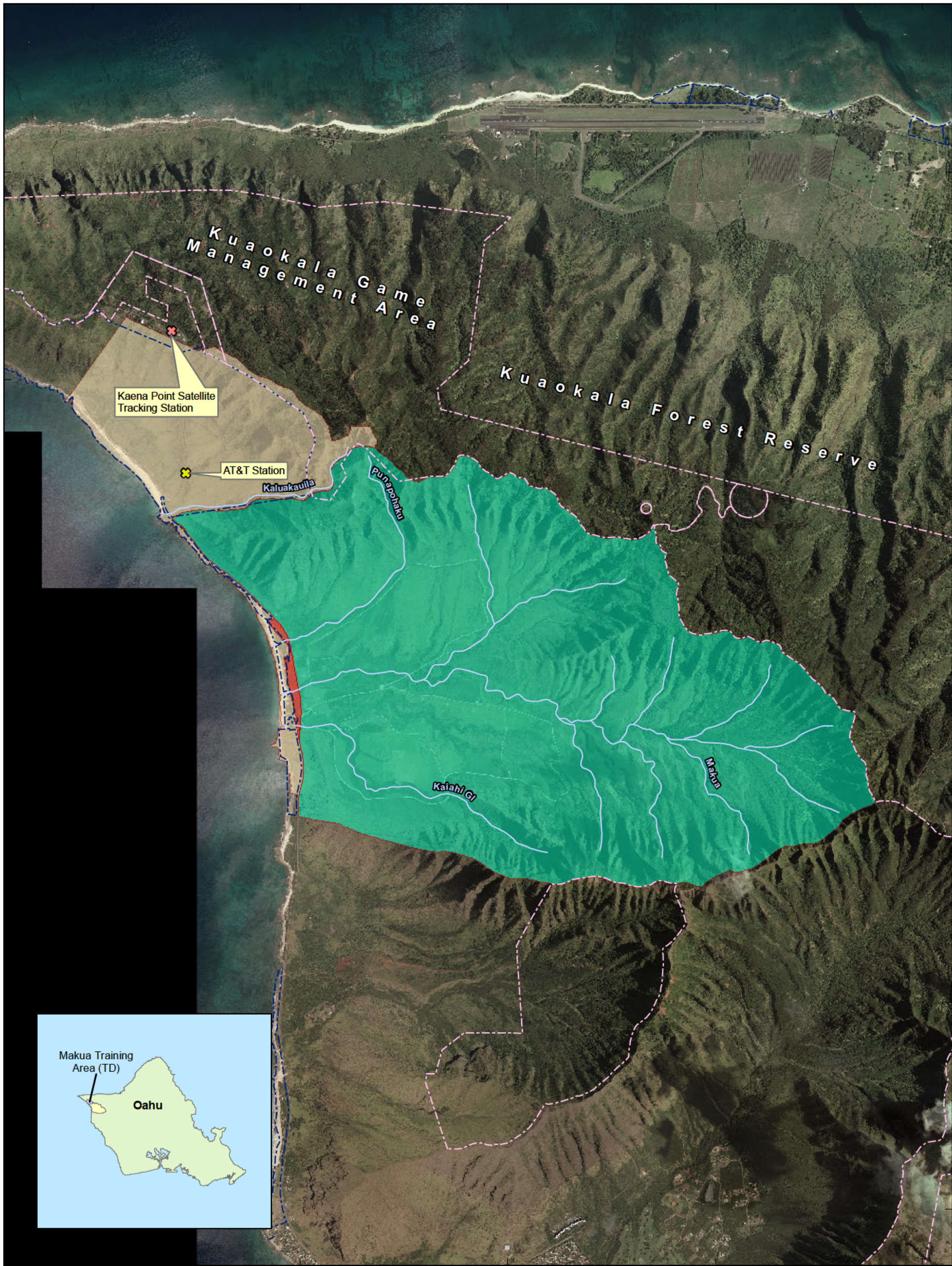
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1-3

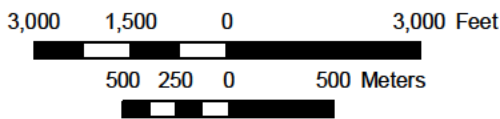


Generated By: EC Date: 08/03/11 File Path: H:\Makua_HI_GIS\GISDocuments\Project_Maps\MAKUA_RI_MAPS\MAKUA_RI_Fig1-2_REGIONAL_LOC.mxd

Legend

- Streams
- Hunting Areas
- Kaena Point State Park
- Beach Assault Training Area (BATA)
- Makua Training Area (TD) (MTA (TD))
- Makua Military Reservation (MMR)

MTA (TD) = 856 acres
BATA = 19 acres

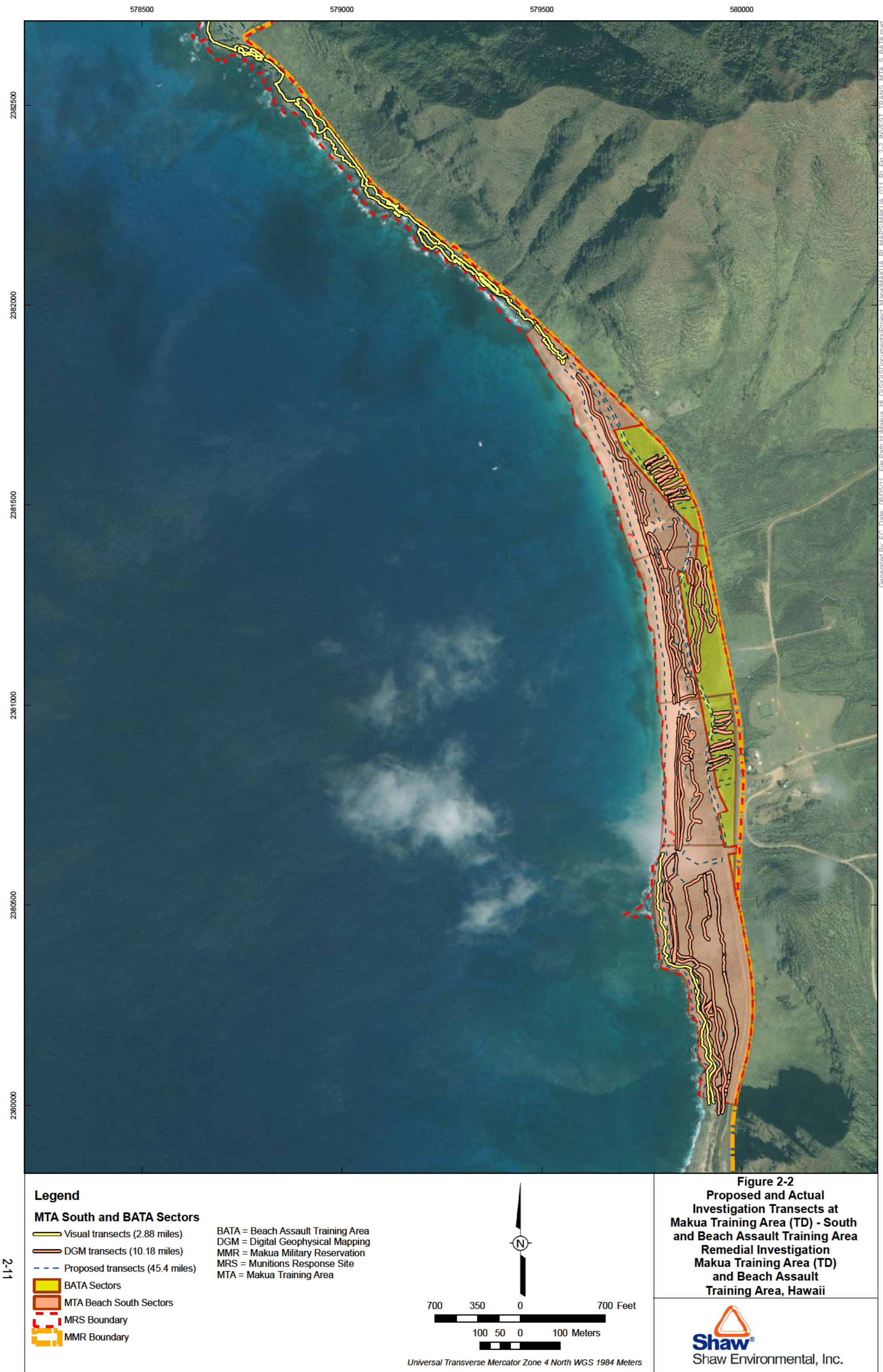


Universal Transverse Mercator
Zone 4 North WGS 1984 Meters

Figure 1-2
Regional Location Map,
Makua Training Area (TD) and
Beach Assault Training Area



Shaw Environmental, Inc.

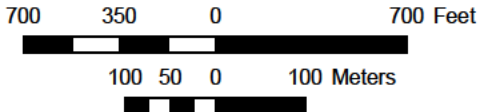
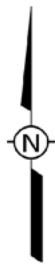


Legend

MTA South and BATA Sectors

- Visual transects (2.88 miles)
- DGM transects (10.18 miles)
- Proposed transects (45.4 miles)
- BATA Sectors
- MTA Beach South Sectors
- MRS Boundary
- MMR Boundary

BATA = Beach Assault Training Area
DGM = Digital Geophysical Mapping
MMR = Makua Military Reservation
MRS = Munitions Response Site
MTA = Makua Training Area



Universal Transverse Mercator Zone 4 North WGS 1984 Meters

Figure 2-2
Proposed and Actual
Investigation Transects at
Makua Training Area (TD) - South
and Beach Assault Training Area
Remedial Investigation
Makua Training Area (TD)
and Beach Assault
Training Area, Hawaii



Legend

- SI MD
- DGM Targets
- Hot Rock
- MD
- MEC
- No Contact
- Other Debris
- SAA
- MD/SAA
- MRS Boundary
- MMR Boundary
- Proposed Separation of Area for FS
- MTA (TD) MRS Area - MTA Beach Sectors 1, 2, 3, and 5 and Narrow Strip: No Further Action
- BATA MRS Area - BATA Sectors: Continue CERCLA
- MTA (TD) MRS Area - MTA Beach South Sectors: Continue CERCLA
- MTA (TD) MRS Area - MTA Inland Sectors, MTA Beach Sector 4, and Ridge Sectors: Continue CERCLA

BATA = Beach Assault Training Area
CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act
FS = Feasibility Study
MD = Munitions Debris
MEC = Munitions and Explosives of Concern
MMR = Makua Military Reservation
MRS = Munitions Response Site
MTA = Makua Training Area
SAA = Small Arms Ammunition
SI = Site Inspection

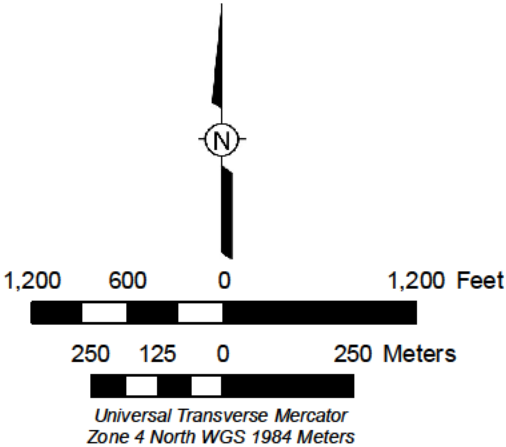


Figure 6-1
MRS Recommendations Summary
Remedial Investigation
Makua Training Area (TD) and
Beach Assault Training Area

Shaw
Shaw Environmental, Inc.

**FINAL
OPERATIONAL RANGE ASSESSMENT PROGRAM
PHASE I QUALITATIVE ASSESSMENT REPORT ADDENDUM
MAKUA MILITARY RESERVATION
OAHU, HAWAII**

DECEMBER 2013



Prepared for:

UNITED STATES ARMY ENVIRONMENTAL COMMAND



and

UNITED STATES ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT



Contract No. W9128F-10-D-0056

Prepared by:

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.





EA EA Engineering, Science,
and Technology, Inc.

Army Operational Range Assessments Periodic Reviews Makua Military Reservation, HI

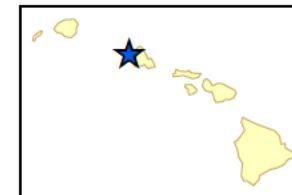
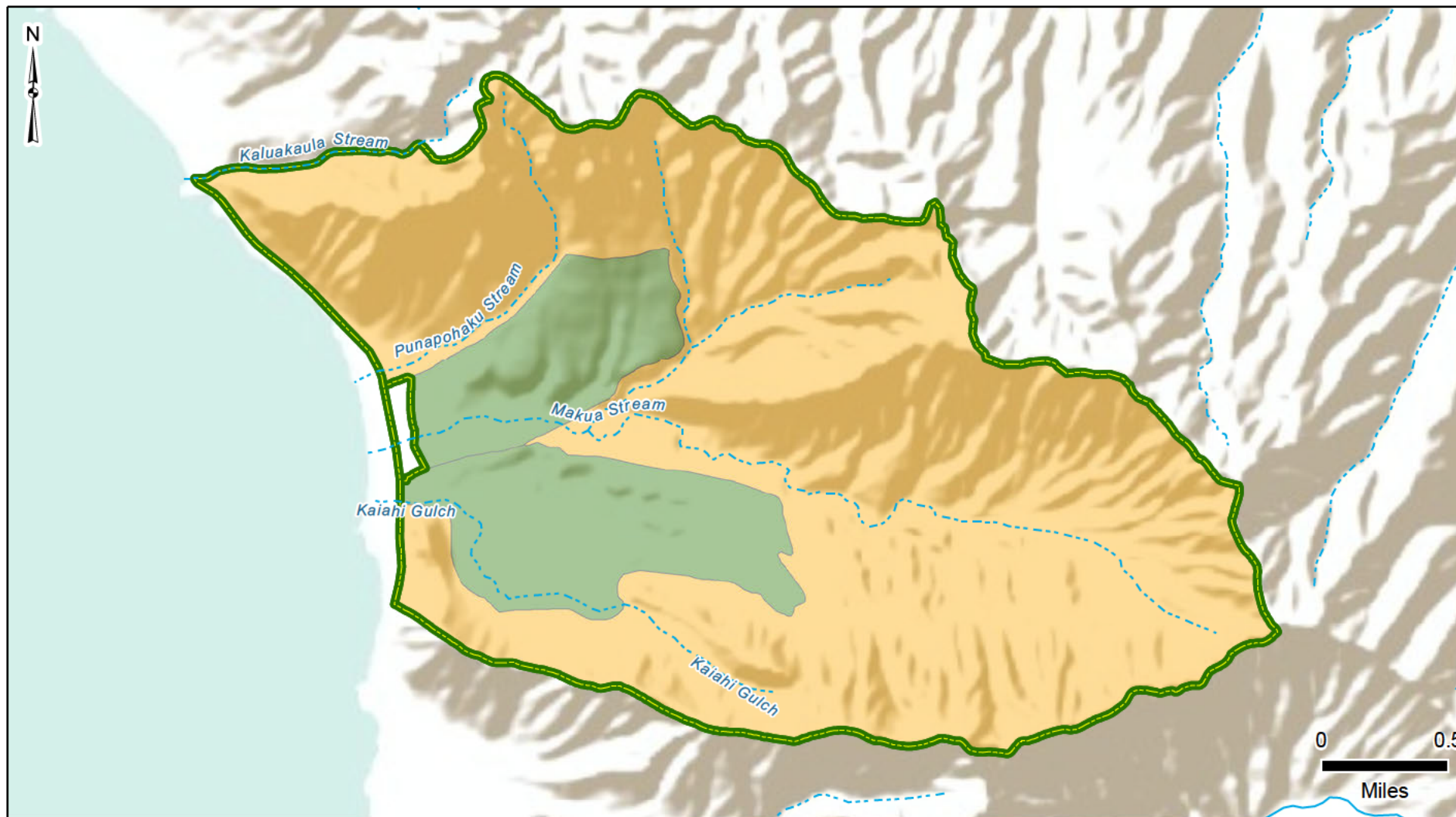


Figure 2-1
Operational Range Layout



Installation Data

Installation Boundary

Range Conclusions

Dudded Impact Area

Firing Range

Hydrology

Perennial River/Stream

Intermittent River/Stream

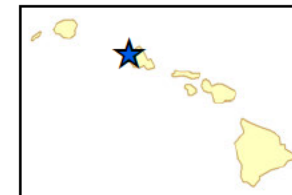
Data Sources:
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ArcGIS Map Service 2012

Date:.....December 2013
Prepared By:EA Engineering, Science, and Technology, Inc.
Prepared For:.....USACE and USAEC

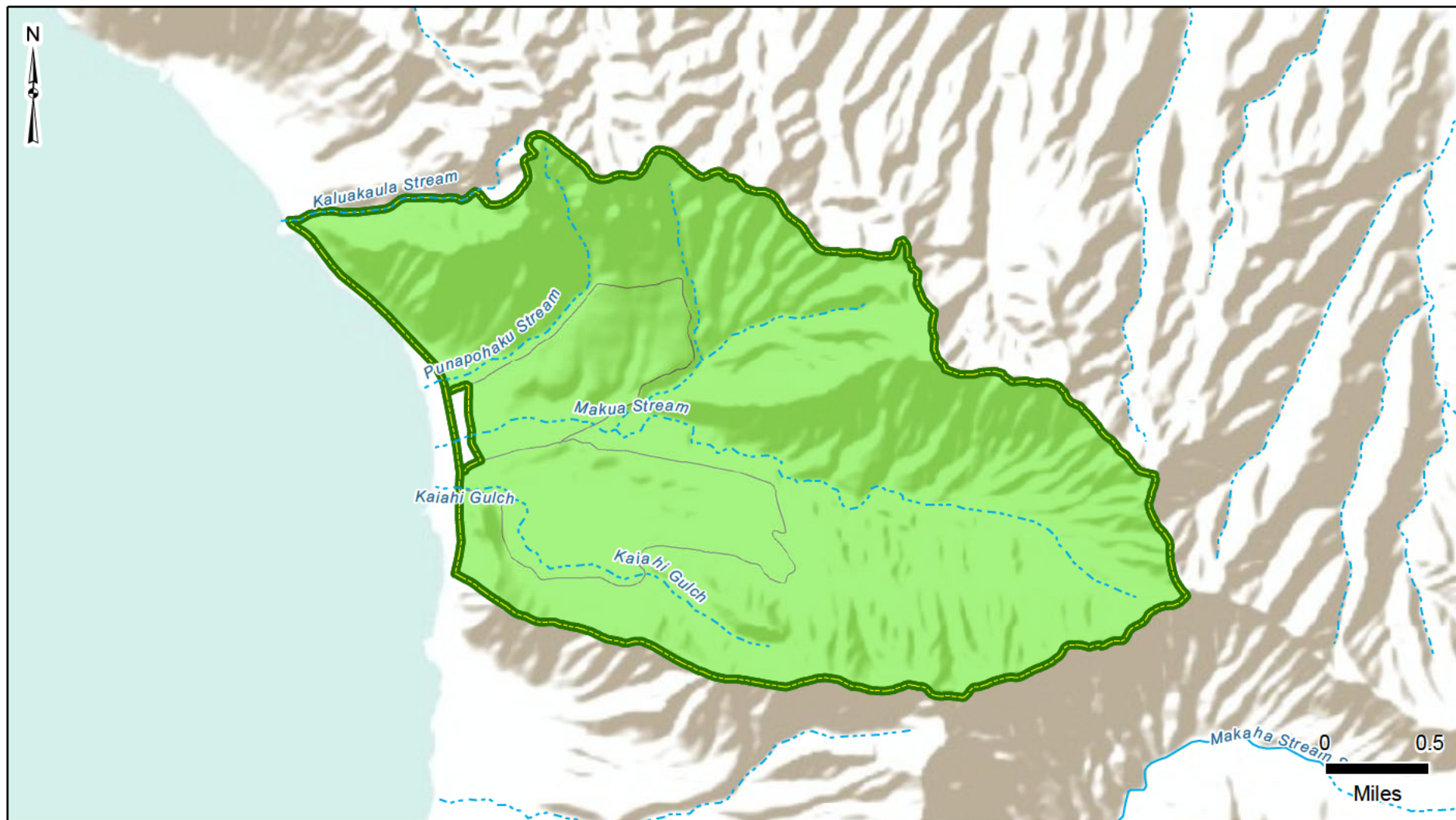


EA EA Engineering, Science,
and Technology, Inc.

Army Operational Range Assessments Periodic Reviews Makua Military Reservation, HI



**Figure 2-2
Phase I Conclusions**



Installation Data

Installation Boundary

Range Conclusions

Unlikely

Hydrology

Perennial River/Stream

Intermittent River/Stream

Data Sources:
ARID-GEO, 2005
ArcGIS Map Service 2012

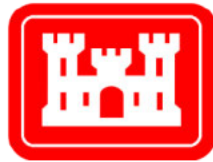
Date:.....December 2013
Prepared By:EA Engineering, Science, and Technology, Inc.
Prepared For:.....USACE and USAEC

**Final
Decision Document
MTA (TD) NFA Plateau and Beach South MRS
Makua Military Reservation
(MAKU-002-R-03)
Munitions Response Site
Oahu, Hawaii**

Contract No.: W912DR-09-D-0006

Delivery Order No.DM03

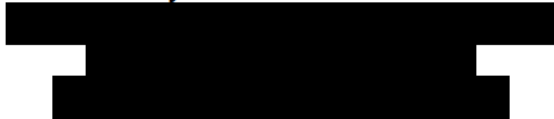
Prepared For:



U.S. Army Corps of Engineers



U.S. Army Environmental Command



Office of the Garrison Commander



May 2015

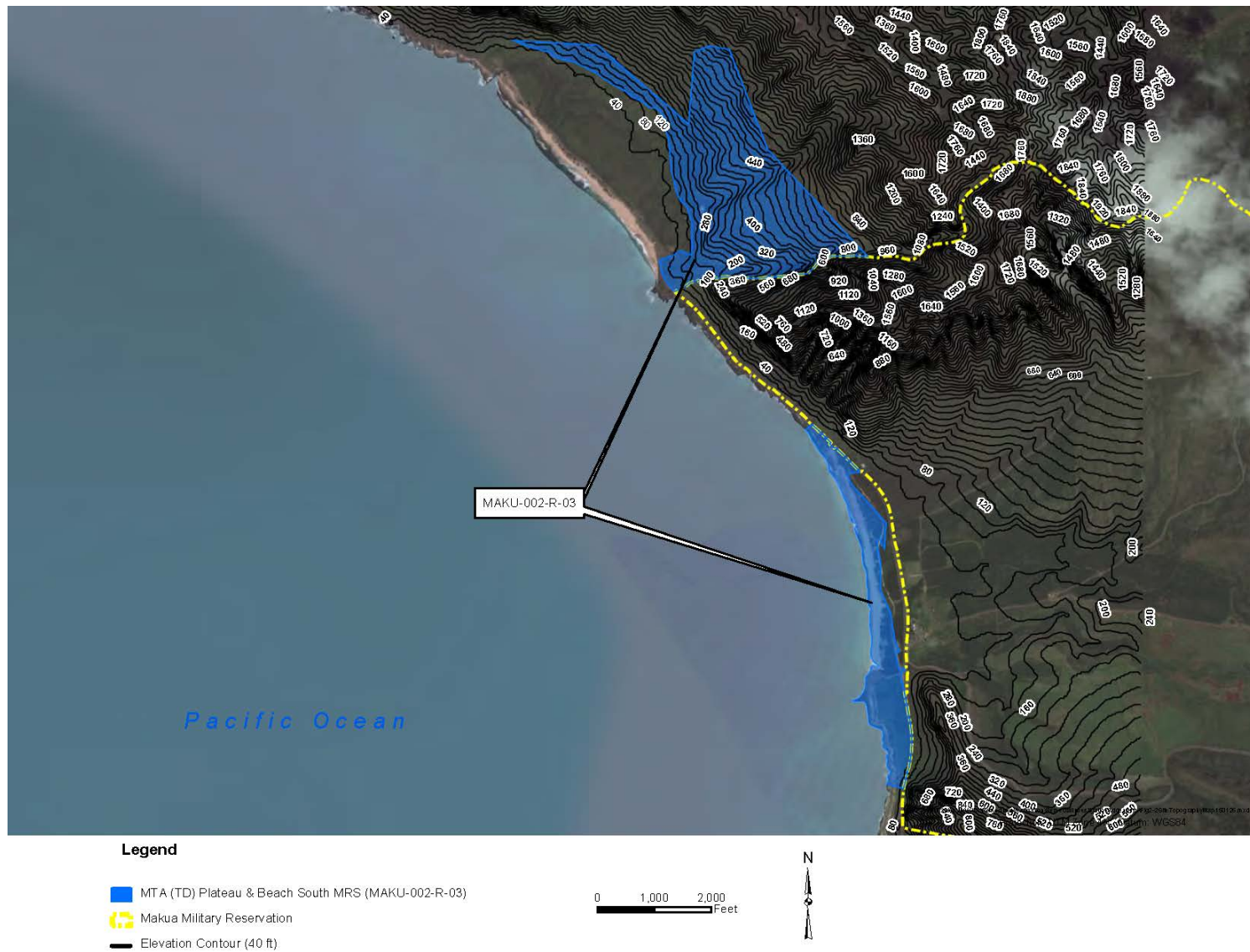


Figure 2-2: Site Topography Map

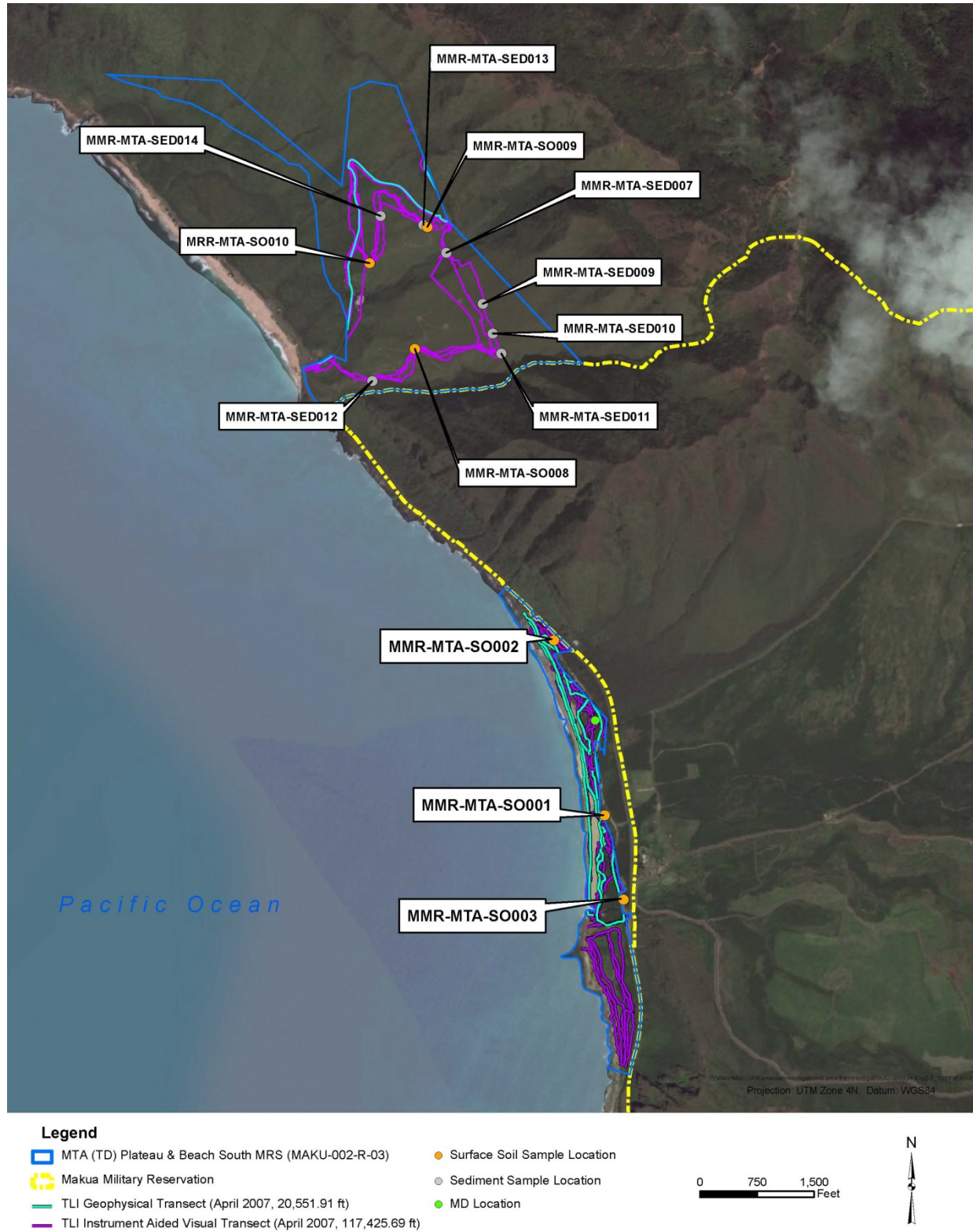


Figure 2-3: Site Inspection Visual and Geophysical Survey Transects and MC Sample Locations

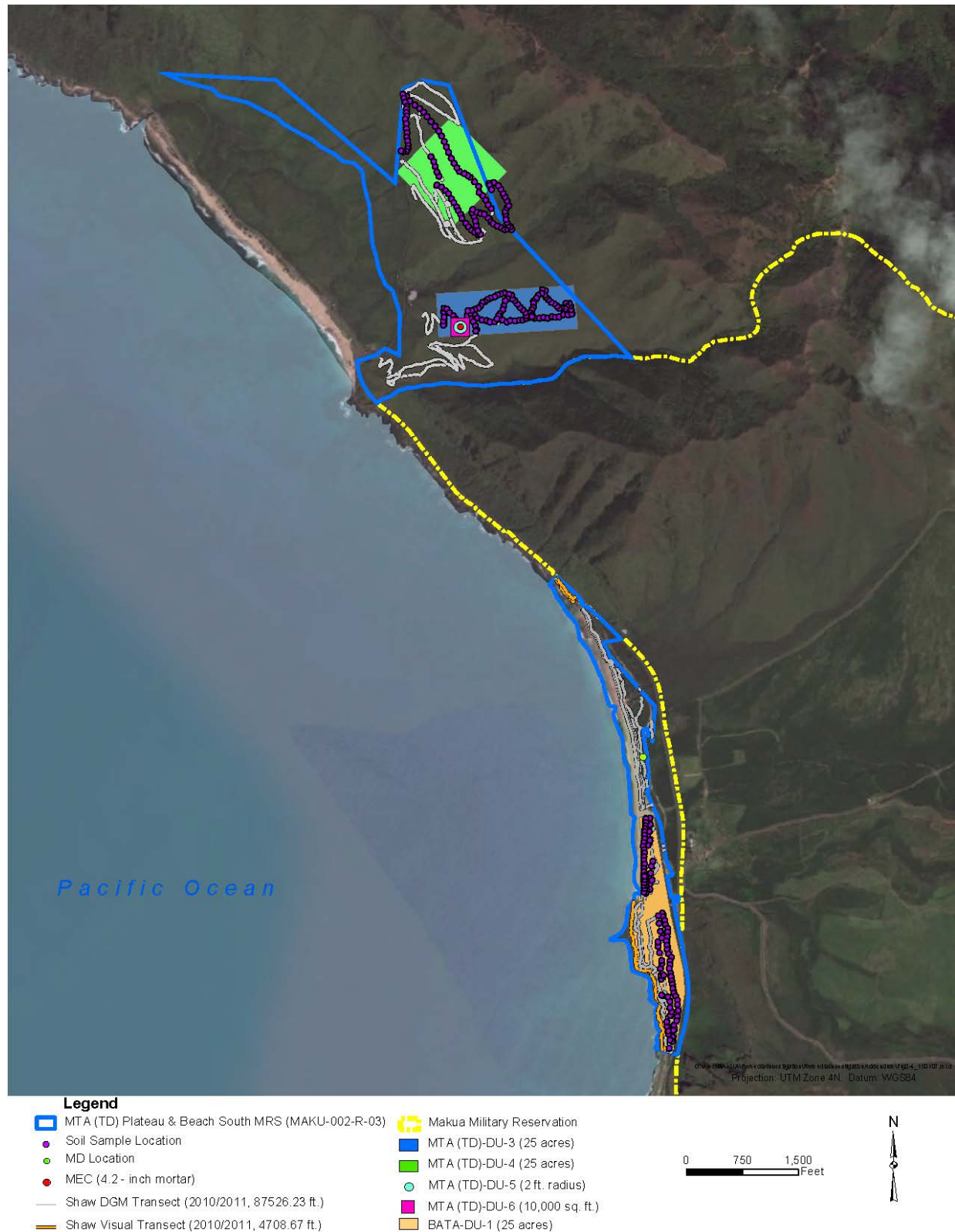
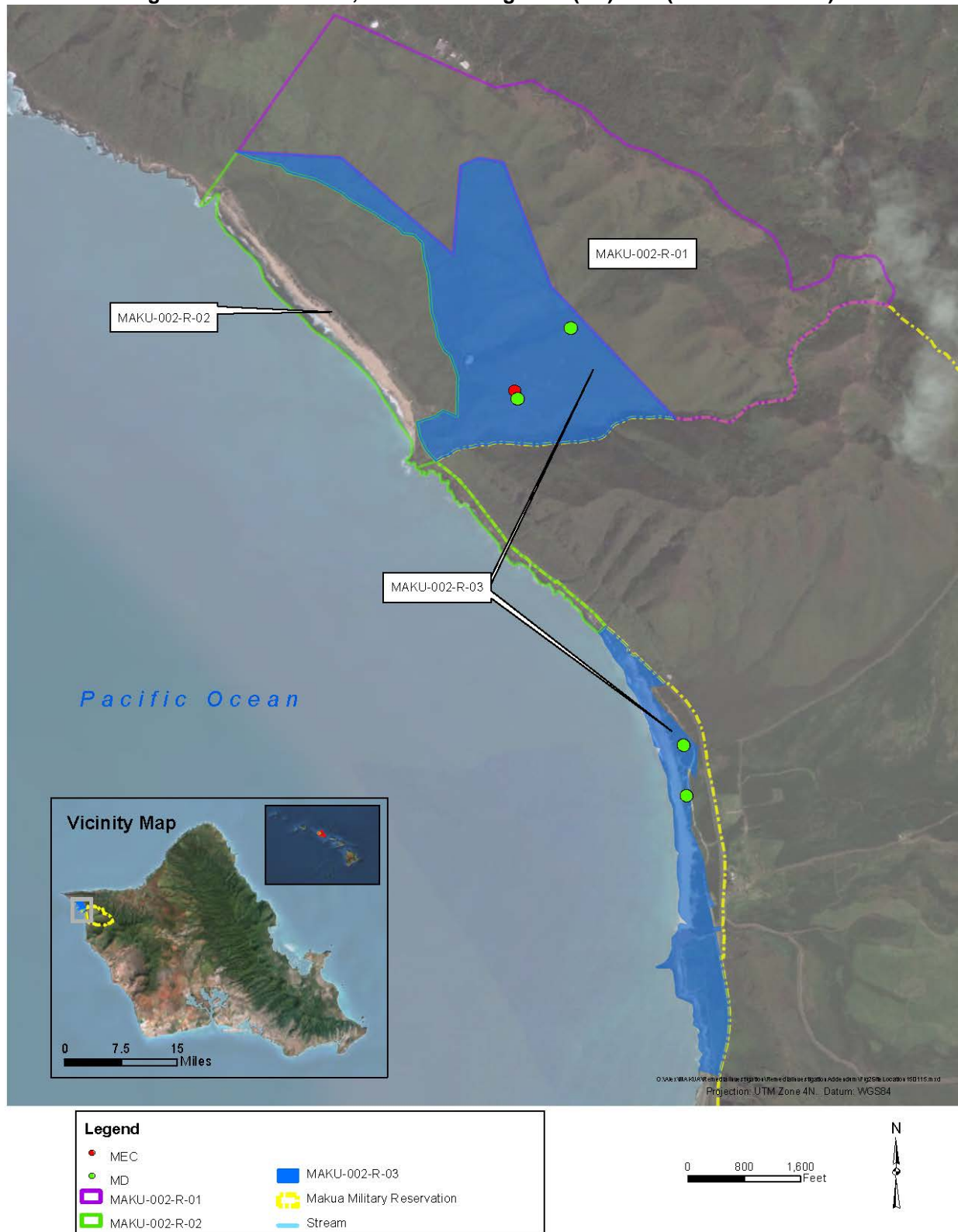


Figure 2-4: Remedial Investigation Geophysical Survey Transects, MEC Investigation Results, and MC Sample Locations



Figure 2-5: Remedial Investigation Addendum Geophysical Survey Transects and MEC Investigation Results

Figure 2: Site Location, Makua Training Area (TD) MRS(MAKU-002-R-03)



USAG-HI

U.S. Army Garrison - Hawai'i

Mākua Marine Resources Supplemental Study Report

June 2015

For questions on this report:

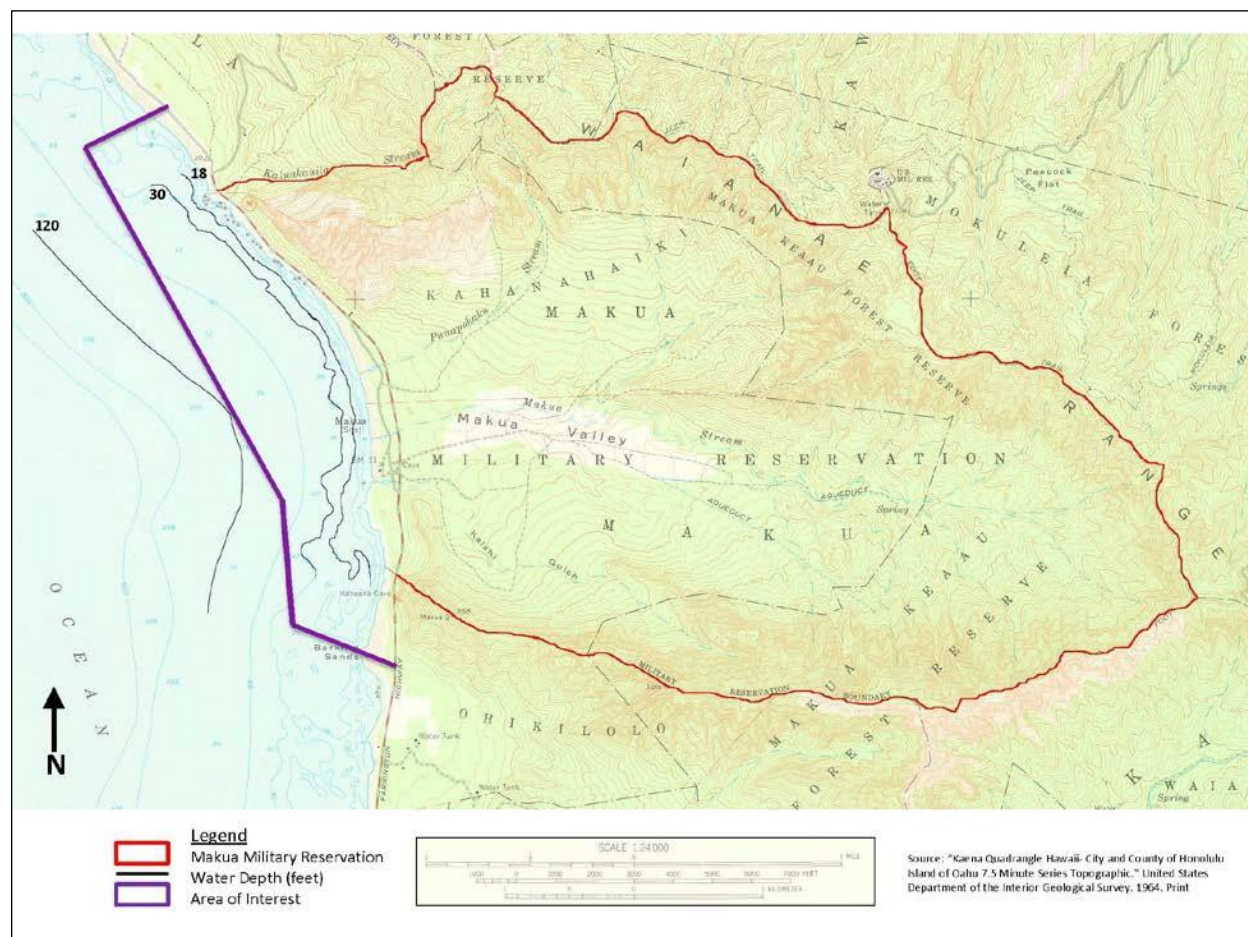
Contact

Schofield Barracks Public Affairs at [REDACTED]

or email: [REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Figure 2. Map of the Mākua Military Reservation showing the study area.



The installation encompasses almost 4,190 acres with annual rainfall ranging around 50 inches (in.) toward the head of the valley to less than 15 in. at the mouth of the valley (Giambelluca, Nullet, and Schroeder 1986). The high precipitous valley walls surrounding the installation reach heights of 2,100 to 2,900 feet (ft). The broad range in rainfall and topography results in a diversity of vegetation types within the valley.

Use of Mākua Valley by U.S. armed forces dates back to the 1920s when three parcels on the upper Mākua Valley floor were purchased for howitzer emplacements. After the bombing of Pearl Harbor in 1941, the Army used its authority under martial law to take over the entire Mākua-Ka'ena Point area for security and training. In 1942, the Army issued a real estate directive for 6,600 acres of land at Mākua that were already being used.

Private parcels within the property were obtained by condemnation, whereas territorial lands were conferred by the territorial governor's

Figure 14. Mākua Study Area showing sampling transects.

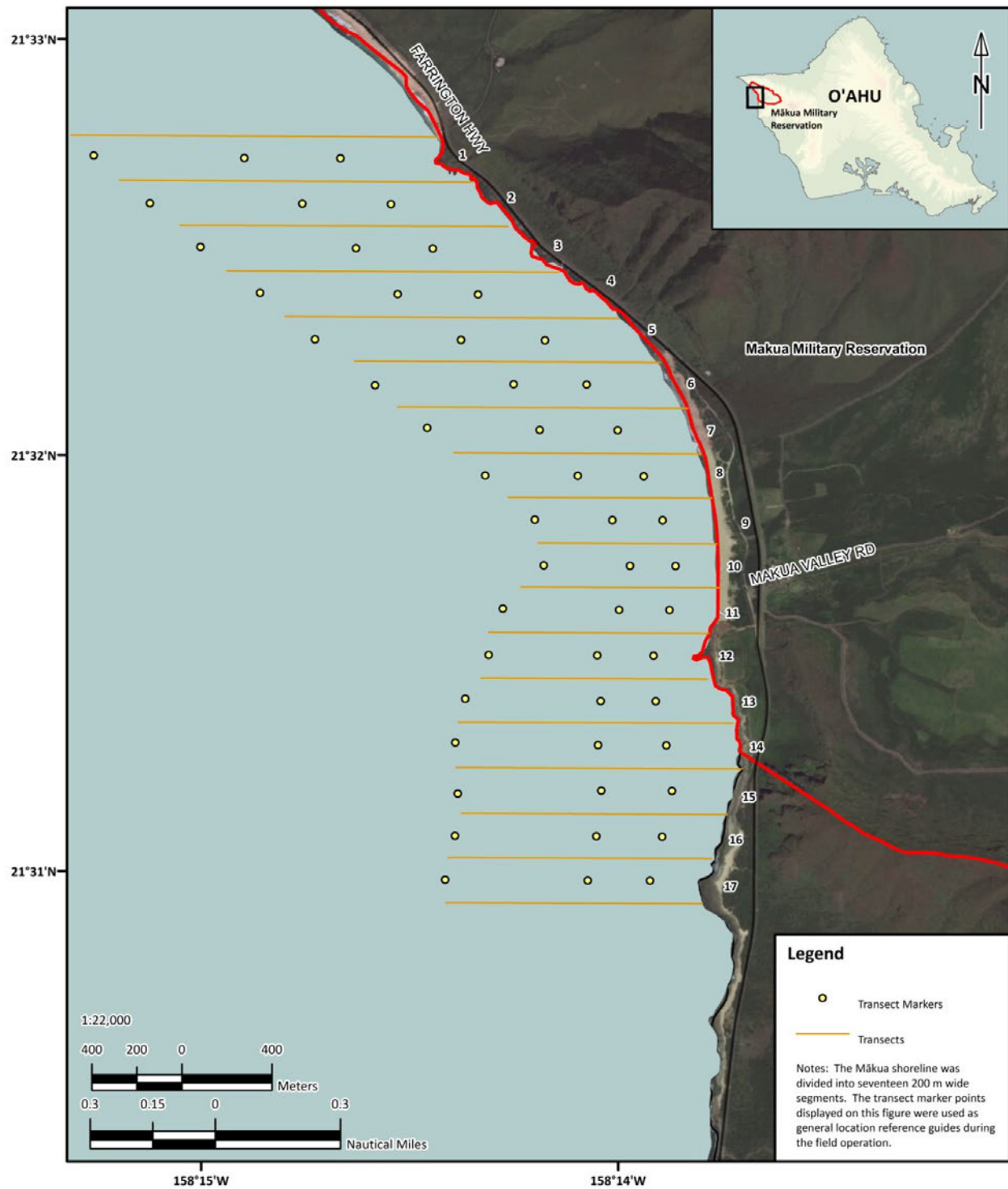


Figure 33. 2013 Sample locations at Mākua.

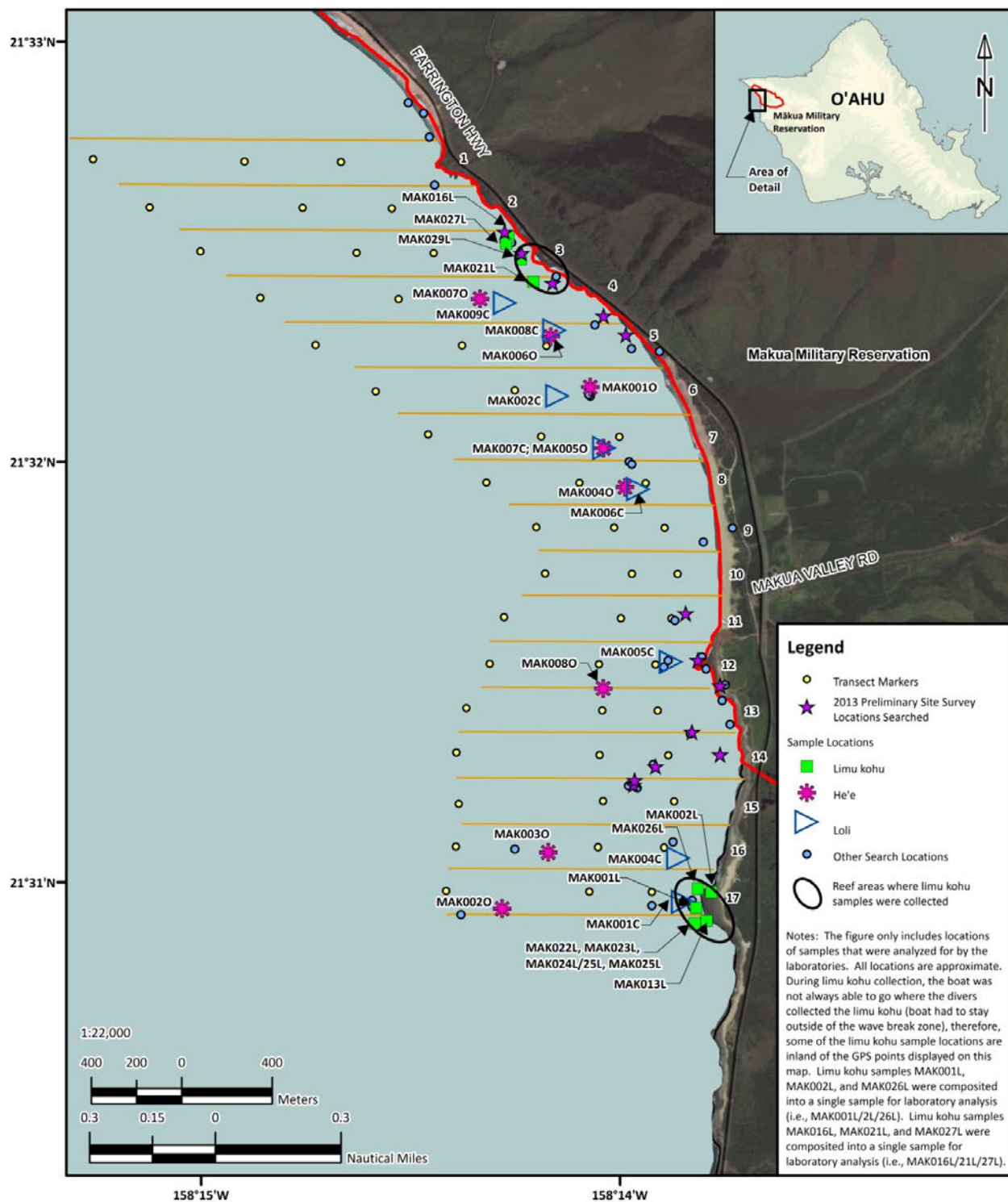
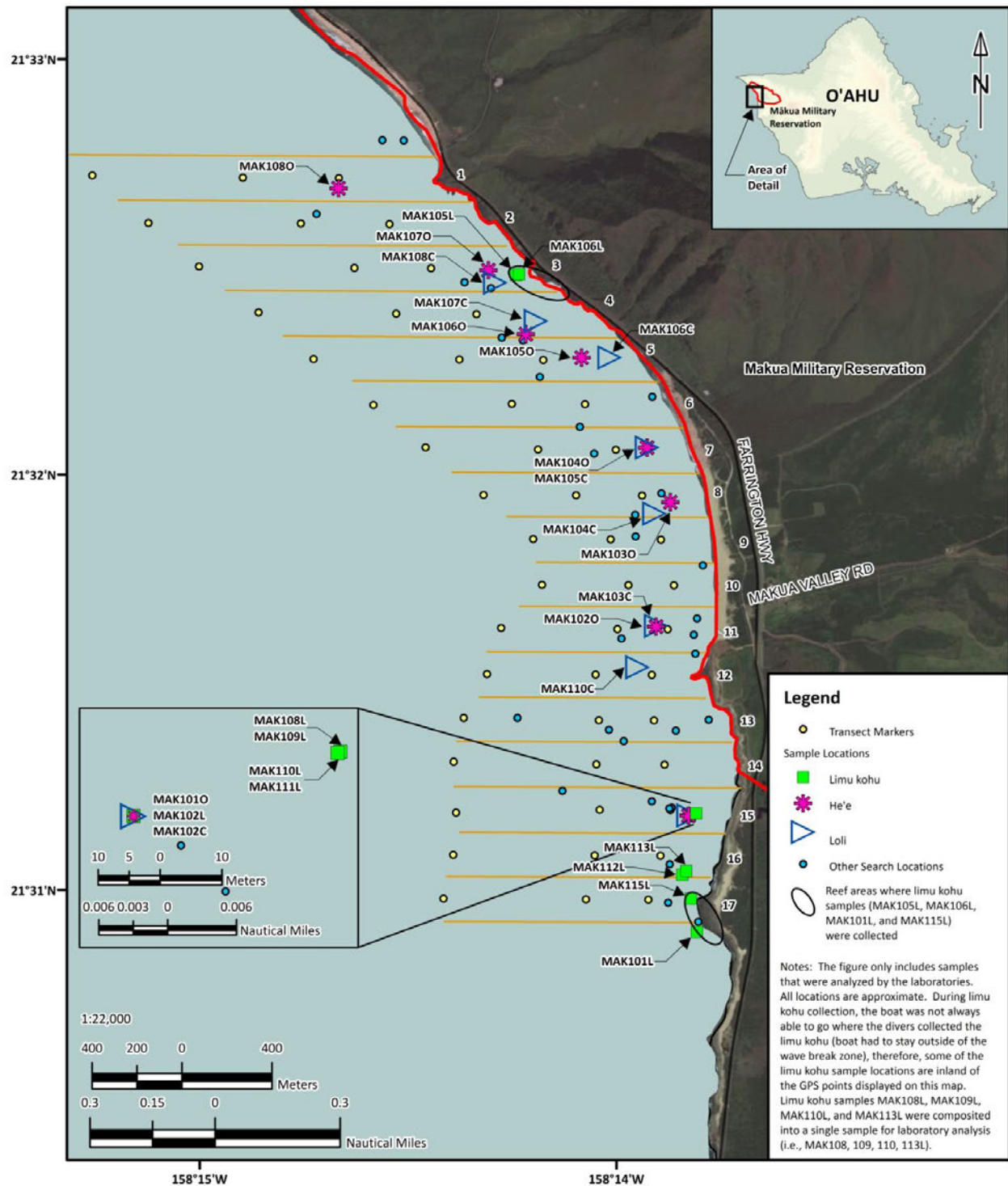


Figure 36. 2014 Sample locations at Mākua.



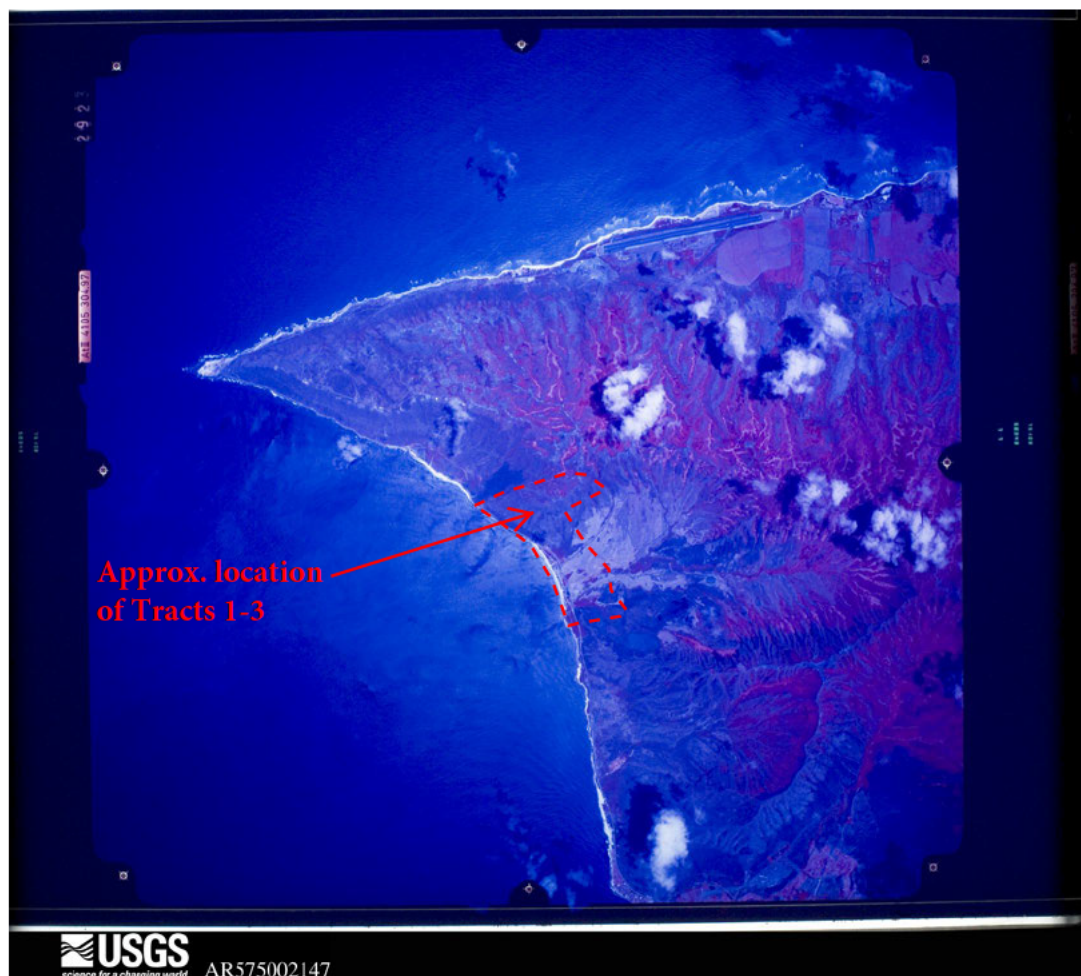
APPENDIX C – HISTORICAL RECORDS

AERIAL PHOTOGRAPHS

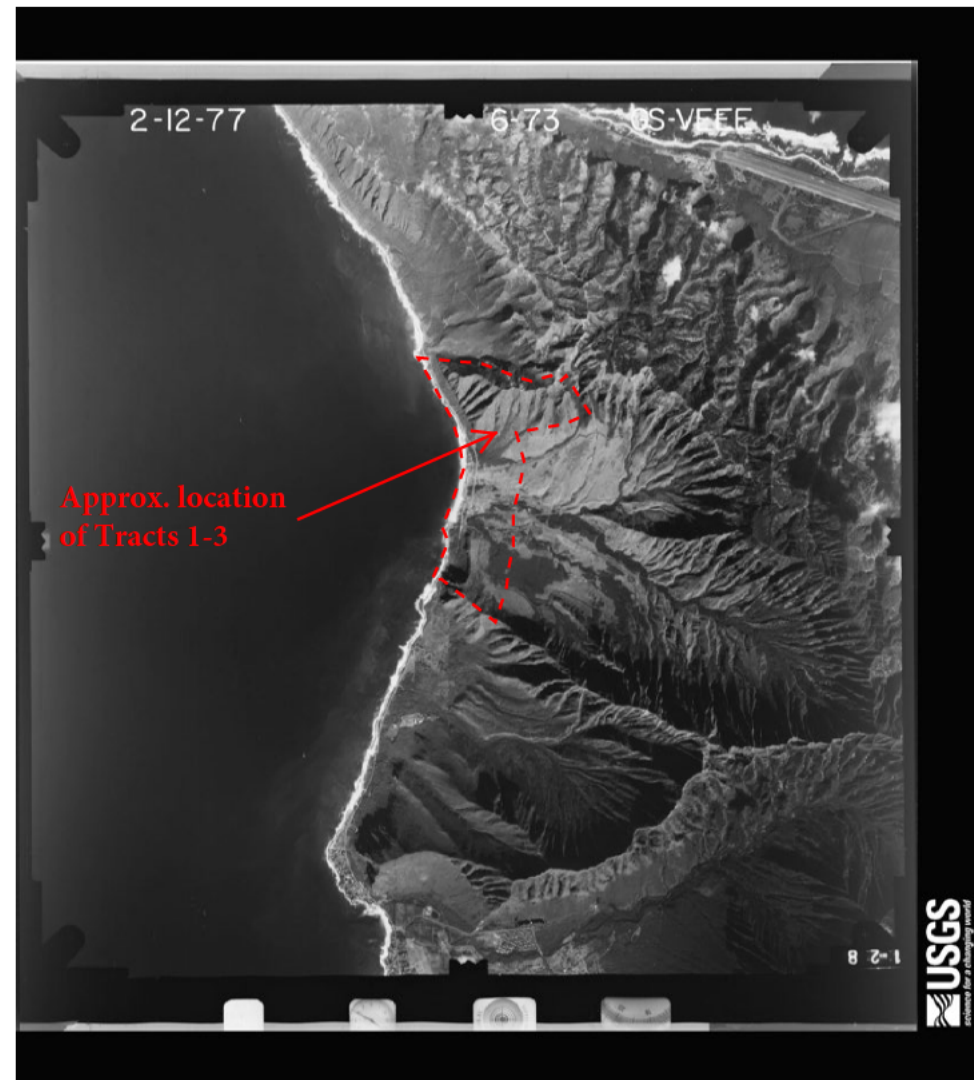
TOPOGRAPHIC MAPS

LEASE DOCUMENTS

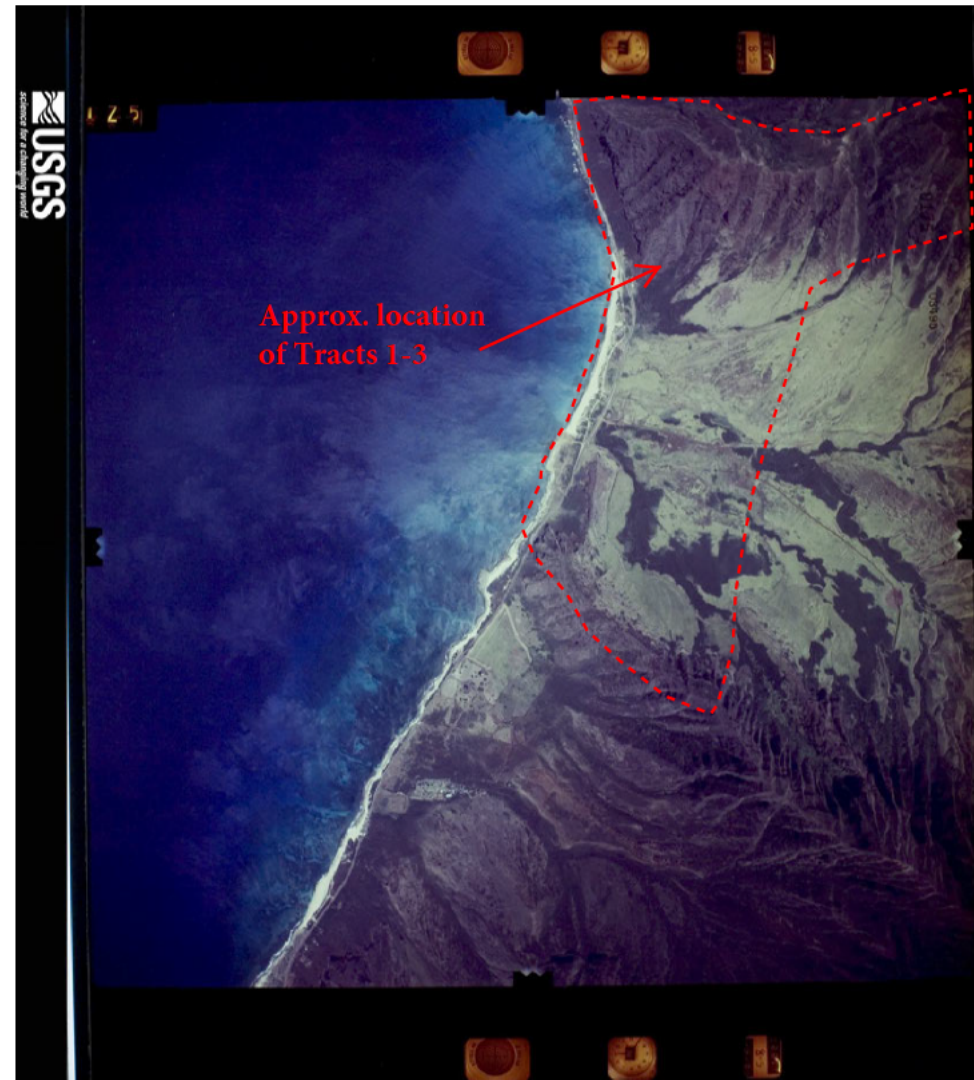
1975



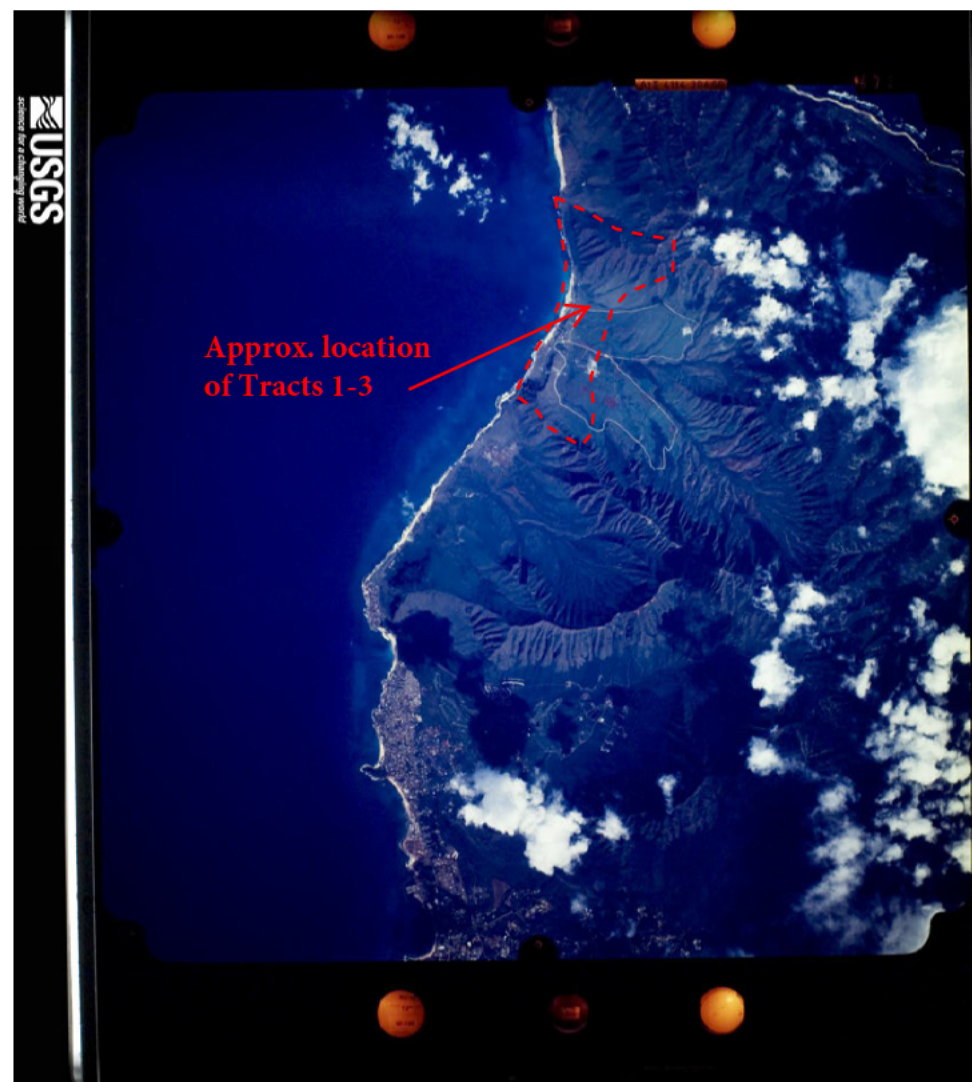
1977



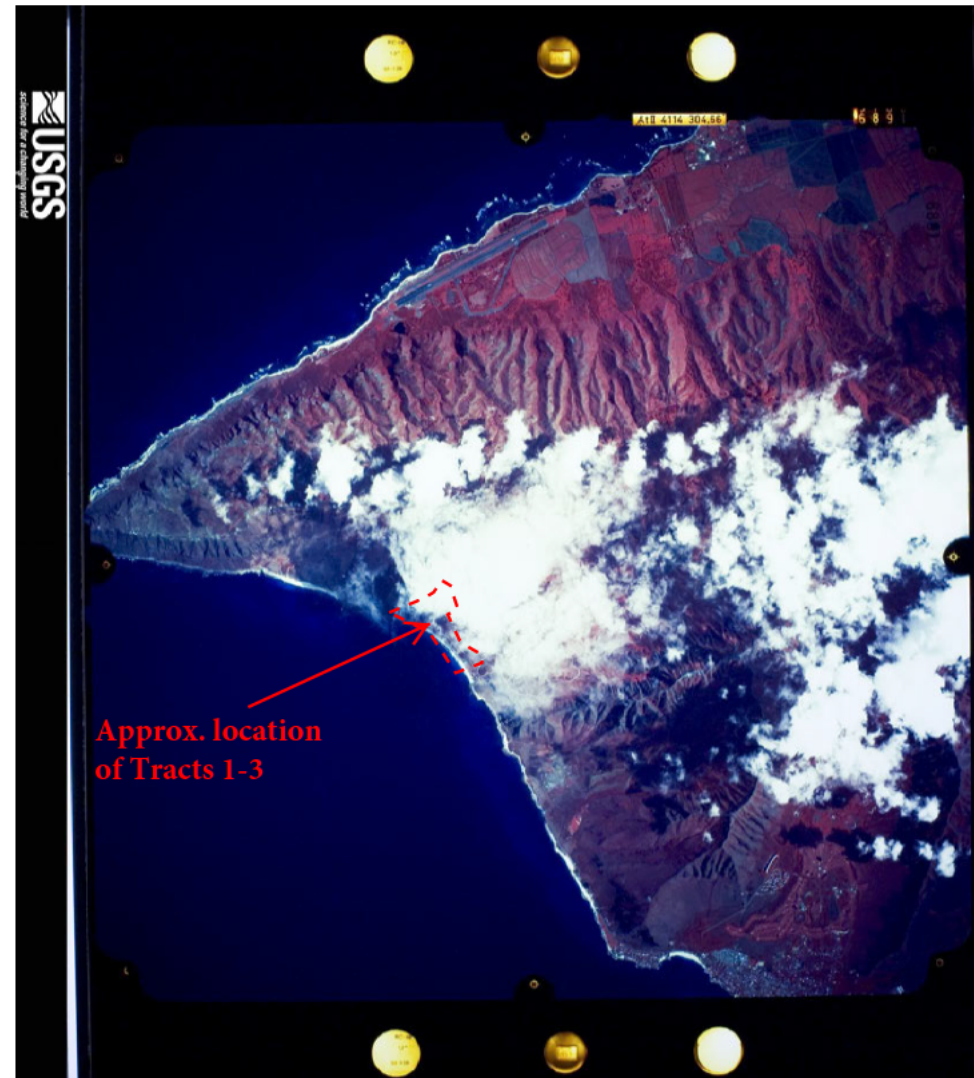
1985



1992



1992



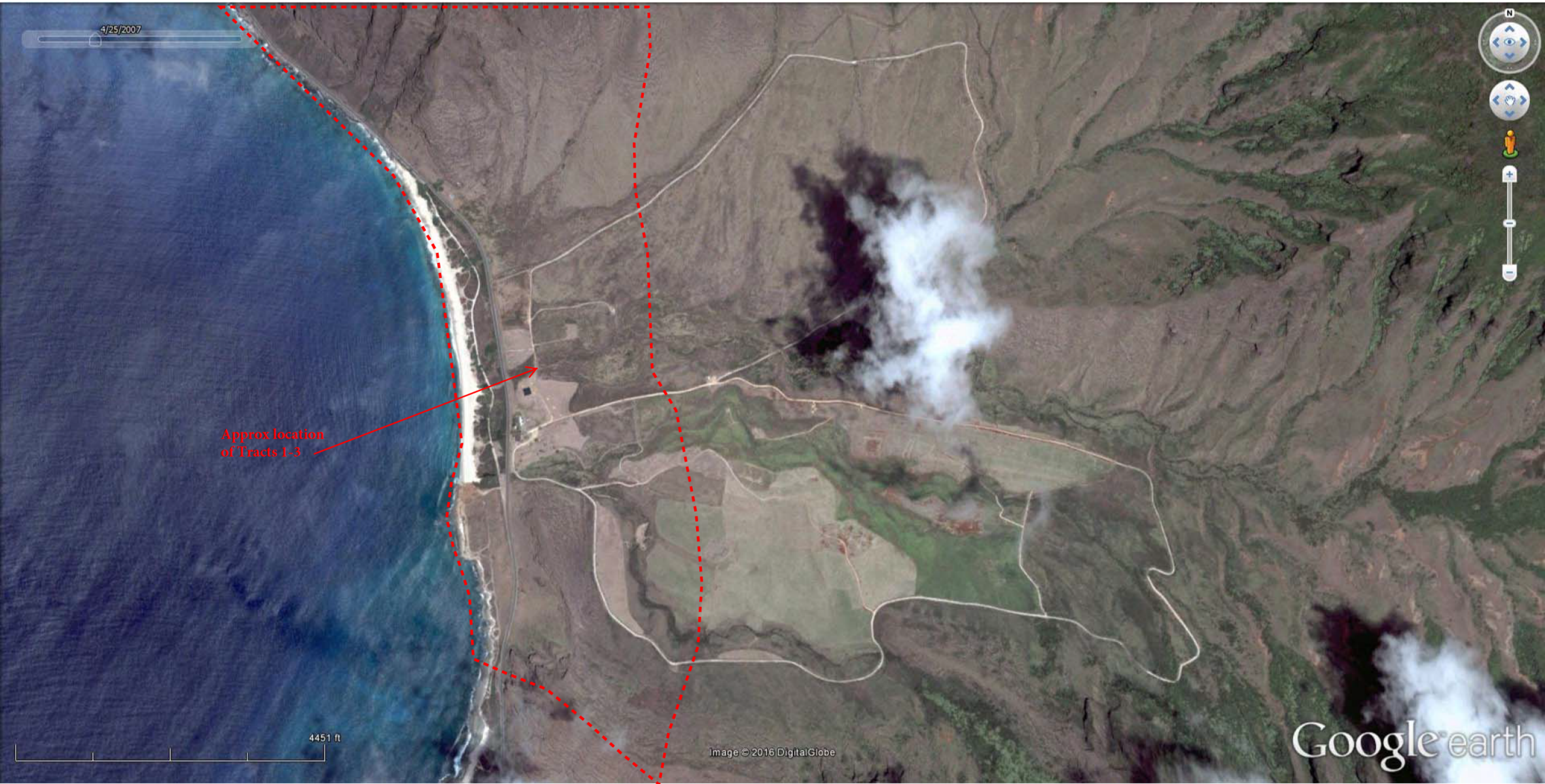
2004



2006



2007



2008



2011



Approx location
of Tracts 1-3

4451 ft

Image © 2016 DigitalGlobe

Image USGS

Google earth

2013

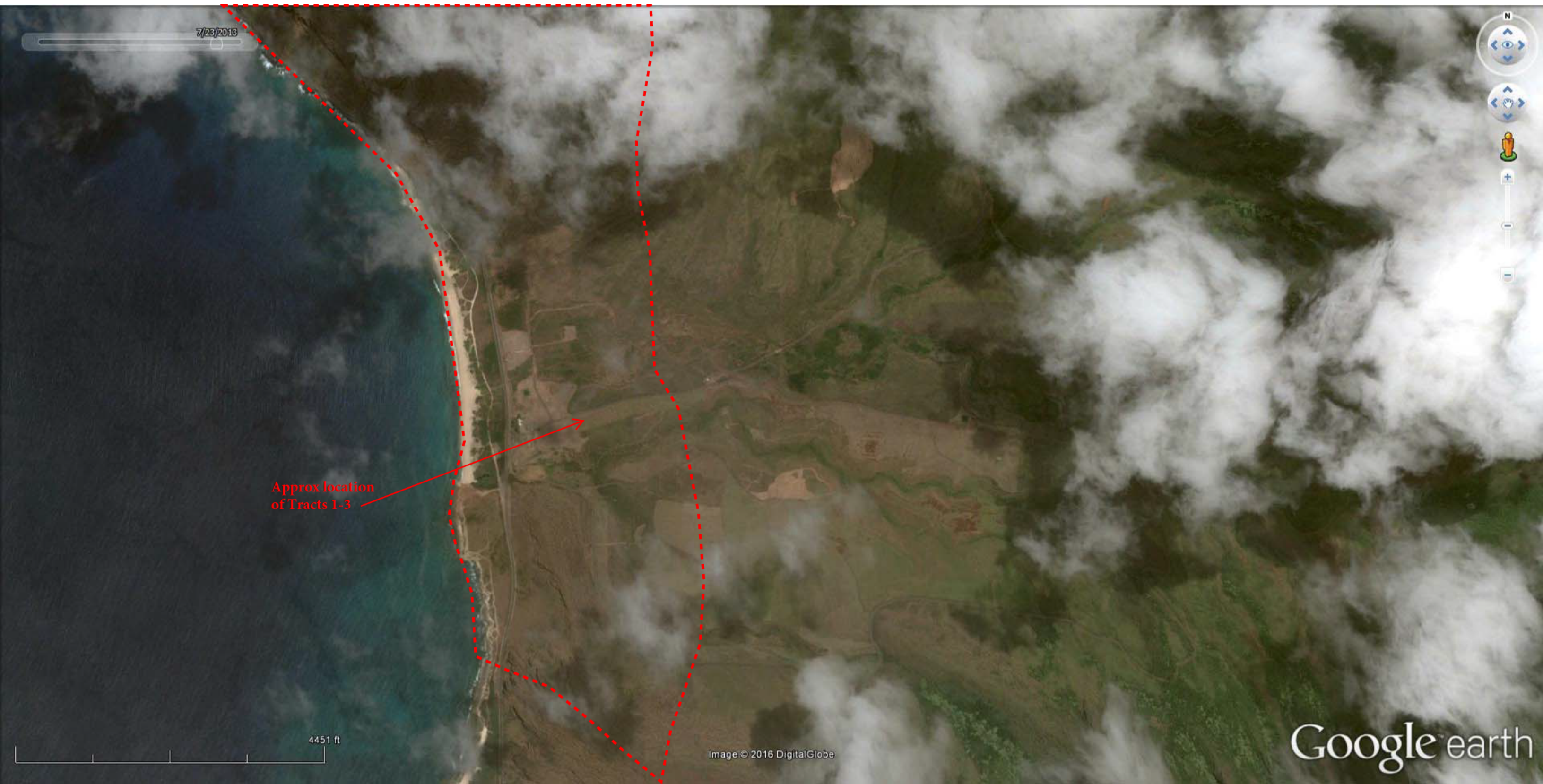


Approx location
of Tracts 1-3

4451 ft

Google earth

2013



Approx location
of Tracts 1-3

4451 ft

Image © 2016 DigitalGlobe

Google earth

2014



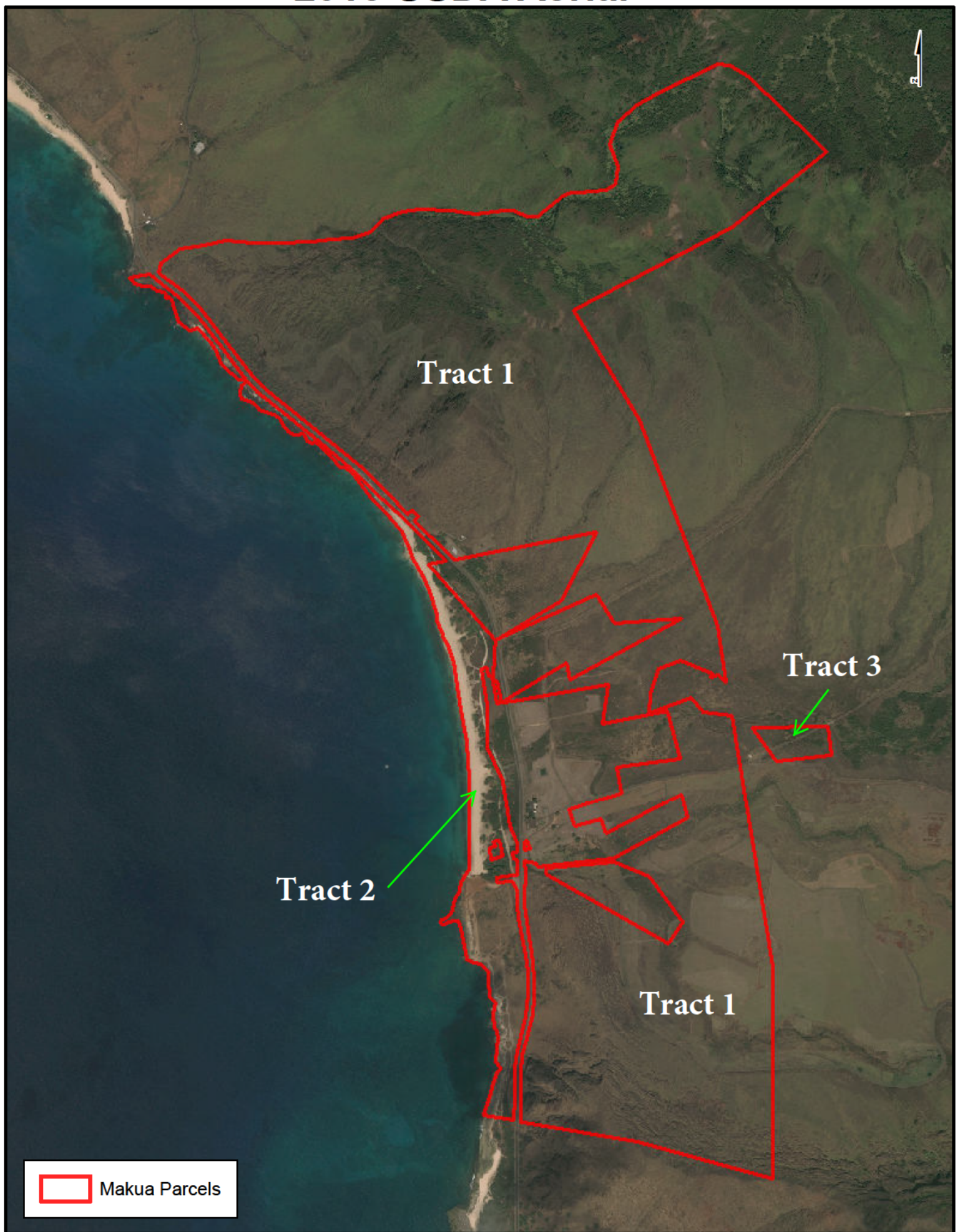
Approx location
of Tracts 1-3

4451 ft

Image © 2016 DigitalGlobe

Google earth

2015 USDA Aerial





Makua

Makua

Waianae, HI 96792

Inquiry Number: 4582735.1

April 04, 2016

EDR Historical Topo Map Report

with QuadMatch™



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: [REDACTED]
www.edrnet.com

EDR Historical Topo Map Report

04/04/16

Site Name:

Makua
Makua
Waianae, HI 96792
EDR Inquiry # 4582735.1

Client Name:

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] :



EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Hart Crowser, Inc. were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDR's Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:**Coordinates:**

P.O.#	3131-003-04	Latitude:	21.534228 21° 32' 3" North
Project:	NA	Longitude:	-158.22621 -158° 13' 34" West
		UTM Zone:	Zone 4 North
		UTM X Meters:	580131.24
		UTM Y Meters:	2381472.60
		Elevation:	0.00' above sea level

Maps Provided:

2013
1998
1964
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



Kaena
2013
7.5-minute, 24000

1998 Source Sheets



Kaena
1998
7.5-minute, 24000
Aerial Photo Revised 1998

1964 Source Sheets

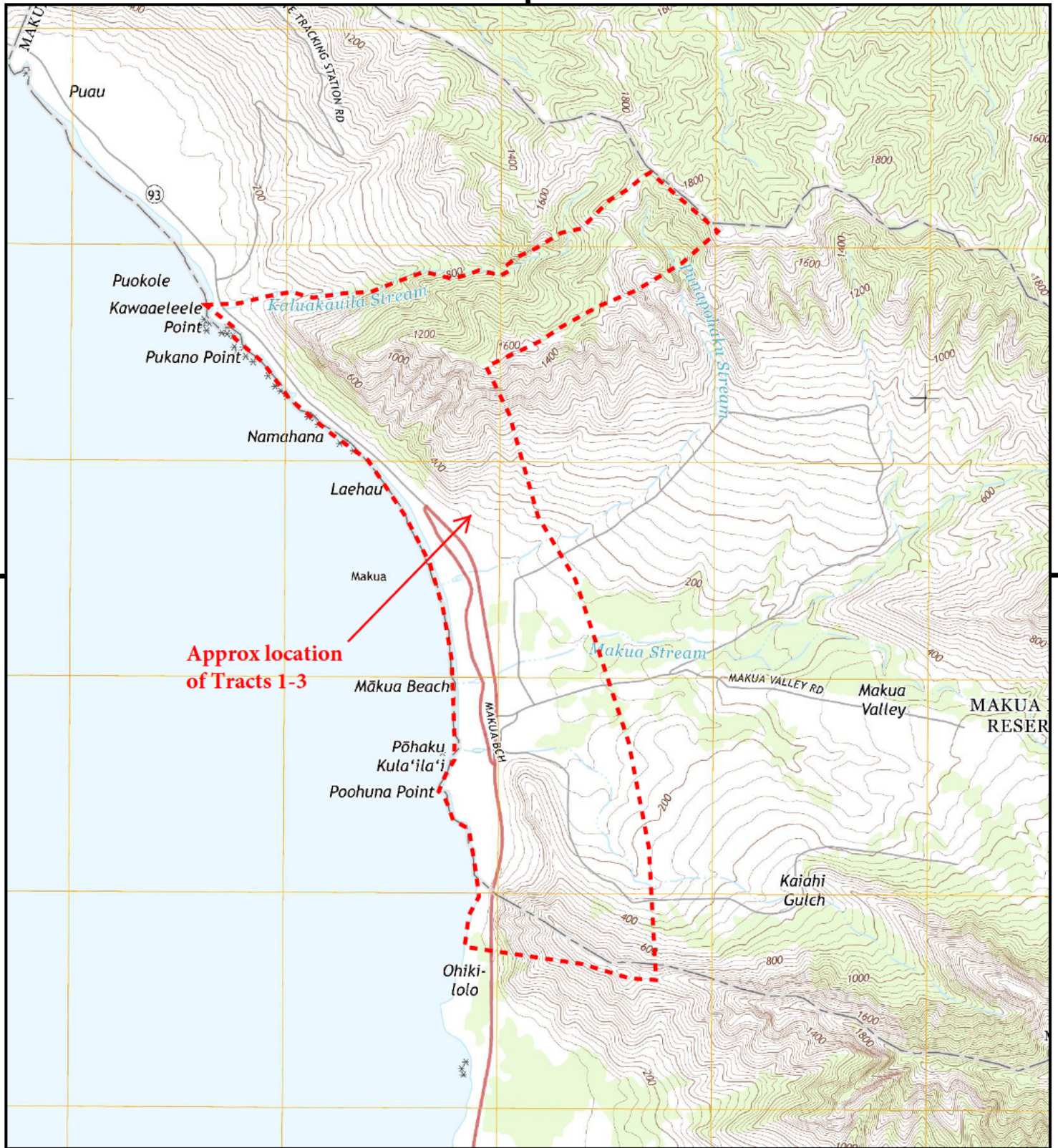


Kaena
1964
7.5-minute, 24000
Aerial Photo Revised 1954
Edited 1964

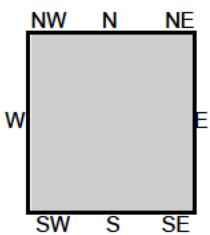
1954 Source Sheets



Kaena
1954
7.5-minute, 24000
Aerial Photo Revised 1952



This report includes information from the following map sheet(s).



TP, Kaena, 2013, 7.5-minute

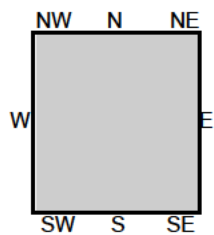
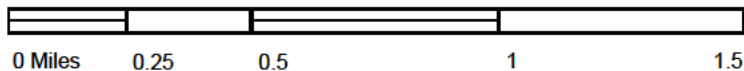
SITE NAME: Makua
 ADDRESS: Makua
 Waianae, HI 96792
 CLIENT: Hart Crowser, Inc.





Approx location
of Tracts 1-3

This report includes information from the
following map sheet(s).



TP, Kaena, 1998, 7.5-minute

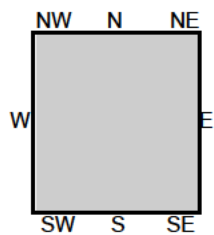
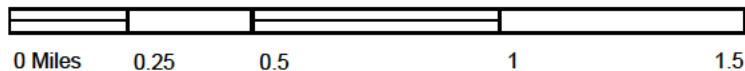
SITE NAME: Makua
ADDRESS: Makua
Waianae, HI 96792
CLIENT: Hart Crowser, Inc.





Approx location
of Tracts 1-3

This report includes information from the following map sheet(s).



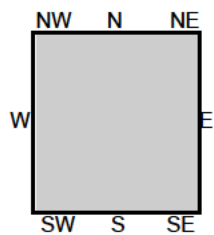
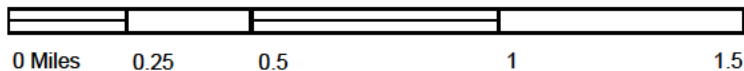
TP, Kaena, 1964, 7.5-minute

SITE NAME: Makua
ADDRESS: Makua
Waianae, HI 96792
CLIENT: Hart Crowser, Inc.





This report includes information from the following map sheet(s).



TP, Kaena, 1954, 7.5-minute

SITE NAME: Makua
ADDRESS: Makua
Waianae, HI 96792
CLIENT: Hart Crowser, Inc.



RECORDATION REQUESTED BY:

U. S. Army Engineer Division,
Pacific Ocean

AFTER RECORDATION, RETURN TO:

U. S. Army Engineer Division,
Pacific Ocean
Phone: 542986

64-26963

STATE OF HAWAII
BUREAU OF CONVEYANCES
RECEIVED FOR RECORD

LIBER 4821 PAGES 409 TO 424

'64 AUG 20 PM 1:37

INDEXED /i/ EK REGISTRAR

RETURN BY: MAIL () PICKUP (X)

SPACE ABOVE THIS LINE FOR REGISTRAR'S USE

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE GENERAL LEASE NO. S-3848
U. S. LEASE, CONTRACT NO. DA-94-626-ENG-79

1. THIS LEASE, made and entered into this 17th day of August, in the year one thousand nine hundred and sixty-four, by and between the STATE OF HAWAII, represented by its Board of Land and Natural Resources, whose address is P. O. Box 621, Honolulu, Hawaii, 96809, and whose interest in the property hereinafter described is that of fee simple owner, for itself, its administrators, successors, and assigns, hereinafter called the "Lessor", and THE UNITED STATES OF AMERICA, hereinafter called the "Government":

WITNESSETH: The parties hereto for the consideration hereinafter mentioned covenant and agree as follows:

2. The Lessor hereby leases to the Government two (2) parcels of land described on Exhibit "A" attached hereto and hereby made a part hereof, all to be used for the following purpose: Military purposes.

3. TO HAVE AND TO HOLD the said premises for a term of sixty-five (65) years beginning August 17, 1964, and ending August 16, 2029; subject, however, to the rights

of the Lessor and the Government respectively to terminate this lease in accordance with provisions 6 and 13 hereof.

4. The Government shall pay the Lessor rent at the following rate: ONE DOLLAR (\$1.00) for the term of the lease, the receipt and sufficiency whereof is hereby acknowledged.

5. The Government shall have the right, during the existence of this lease, to attach fixtures, and erect structures or signs, in or upon the premises hereby leased, which fixtures and structures or signs, so placed in, upon or attached to the said premises shall be and remain the property of the Government and may be removed or otherwise disposed of by the Government. In addition, the Government shall post and maintain signs on roads and trails entering dangerous areas to provide a warning of any dangerous or hazardous activities; provided, that the information placed on the posted signs anywhere within the demised premises shall not be incompatible with the terms of this lease and, in those instances where joint use of an area is permitted, the information placed on the signs may include the permitted joint activities.

6. The Government may terminate this lease at any time by giving thirty (30) days' notice in writing to the Lessor.

7. The Lessor will not be responsible for any loss, liability, claim, or demand for property damage, property loss, or personal injury, including but not limited to death, arising out of any injury or damage caused by or resulting from any act or omission of the Federal Government in connection with the Federal Government's use of the premises described herein.

8. Except as otherwise provided herein, the Government shall have unrestricted control and use of the demised premises, including the right to fire all combat weapons therefrom into the designated Makua Impact Area; provided, however,

the Government shall not use any portion of the demised premises as an impact area for explosive or incendiary munitions of any type and, in recognition of public use of the demised premises, upon completion of a training exercise or prior to entry thereon by the general public, whichever is sooner, the Government shall make every reasonable effort to stockpile supplies and equipment in an orderly fashion and away from established roads or trails and to remove or deactivate all live or blank ammunition from the areas where the general public is permitted under the terms of this lease.

9. The Government shall obtain the written consent of the Lessor prior to constructing any road or building of the type for which design and construction plans are normally required; provided, however, that such consent shall not be arbitrarily withheld. The Government agrees that its training roads which provide primary access within or across the demised premises will be maintained to normal standards for training area roads with due regard for preventing unnecessary erosion; provided, however, that the Government shall be under no obligation to maintain roads during periods when the necessary engineer troops are absent from Oahu.

10. The Government shall take every reasonable precaution to prevent the start of any fire in the areas herein demised and shall take immediate and continuing action to extinguish any and all fires started by or resulting from Government activities. Further, the Government shall establish and at all times maintain a standard operating procedure for fighting fires within or adjacent to the subject leased property resulting from Government training activities during its use and occupancy of the premises; provided, further, that Government

personnel actually using the premises shall be familiar with said standard procedure including the means of implementation.

11. In recognition of the limited amount of land available for public use, of the importance of forest reserves and watersheds in Hawaii, and of the necessity for preventing or controlling erosion, the Government hereby agrees that, commensurate with training activities, it will take reasonable action during its use of the premises herein demised to prevent unnecessary damage to or destruction of vegetation, wildlife and forest cover, geological features and related natural resources and improvements constructed by the Lessor, help preserve the natural beauty of the premises, avoid pollution or contamination of all ground and surface waters and remove or bury all trash, garbage and other waste materials resulting from Government use of the said premises.

12. Except as required for defense purposes in times of national emergency, the Government shall not deliberately appropriate, damage, remove, excavate, disfigure, deface or destroy any object of antiquity, prehistoric ruin or monument.

13. In the event that the leased property is not used by the Government for a period of three (3) consecutive years, this lease may be terminated upon ninety (90) days' written notice from the Lessor to the Government, provided, however, that if prior to the expiration of the aforesaid 90-day period the Secretary of the Army shall find and determine that the leased property is required for military purposes and shall notify the Lessor in writing of this finding and determination, this lease will continue in effect; provided, further, that periods during which a national emergency has been declared by the President or the Congress of the United States and periods

during which major combat elements are temporarily deployed away from the State of Hawaii shall not be included in the said three-year period. During such period of temporary deployment the parties hereto shall discuss and give consideration to and provide for the additional public use of the demised premises compatible with then existing military training requirements. The Government will assure that current military standards concerning adequate utilization are applied to these premises and will assure that such use is known and is a matter of record and available to the Lessor upon request.

14. That portion of the demised premises situate between the ocean and the beach road (Farrington Highway extension) or any realignment thereof approved by the Government agency exercising control of the training area shall be fully available for use by the general public, except during periods when the public will interfere with training activities or training will endanger the said public, whereupon the Government shall publish a notice in two papers of general circulation at least three (3) days prior thereto except when prohibited therefrom due to overriding military contingencies, post necessary signs, other markings and/or guards, and shall have the right to restrict public use of the premises and to control traffic access over the said beach road during all periods of danger. In connection with such public use of the premises, the Lessor shall have the right to construct or place thereon public sanitary facilities, picnic tables, etc., provided that such construction is planned, sited and completed as agreed to by the local military commander having control and accountability of said leased premises, and, provided further, that notwithstanding any other provision of this lease to the

contrary, the Government hereby accepts the responsibility and liability for repairs of any damage which can be demonstrated to have been the direct result of military activities, to improvements constructed by the Lessor subsequent to the date of this lease; provided, however, that the Lessor shall be responsible for exercising proper control of the public during periods when public use is permitted and the Government shall have no liability for maintaining grounds used by the public except for removing any litter, refuse or trash resulting from Government activities.

15. The Lessor hereby agrees that, commensurate with the public use of the premises herein demised, it will take reasonable action during the use of the said premises by the general public, to remove or bury trash, garbage and other waste materials resulting from use of the said premises by the general public.

16. The Government shall have the right to fire over and maneuver across Farrington Highway and, in the interest of public safety, the right to interrupt traffic thereon during such training activities; provided, however, that the Government shall minimize interference with traffic by limiting stoppages thereof to 15-minute periods except when prohibited therefrom due to overriding military operations.

17. In connection with public use of the beach area, the Lessor shall also have the right to develop and use for public purposes Kaneana Cave, commonly called Makua Cave, together with an access foot trail thereto and a parking area adjacent to Farrington Highway.

18. Subject to obtaining advance clearance from the plans and training office of the Government's controlling agency,

or any other designated Government agency, officials and employees of the Lessor and any person or persons duly authorized by the Lessor shall have the right to enter upon the demised premises at all reasonable times to conduct any operations that will not unduly interfere with activities of the Government under the terms of this lease; provided, however, that such advance clearance shall not be unreasonably withheld.

19. All persons legally entitled under the provisions of this lease to be on the said premises shall have a nonexclusive right to use all Government roads and trails except when such use will interfere with the training activities of the Government or said roads and trails have been restricted, by a duly posted sign, as security or danger areas by the Government.

20. The Lessor reserves unto itself all ground and surface water, ores, minerals and mineral rights of every description on, in or under the demised premises but shall exploit or permit others to exploit the said ores, minerals and mineral rights only with the consent of the Government. Notwithstanding the foregoing reservation, the Government shall have the right to develop and use for road construction projects on the demised premises sources of coral, rock and similar materials occurring naturally on the said premises and to use said ground and surface waters for purposes incident to the rights granted by this lease.

21. The Government will not be responsible for any loss, liability, claim or demand for any property damage, property loss, or personal injury, including but not limited to death, arising out of injury or damage caused by or resulting from any act or omission of the Lessor or the general public in connection with their use of the premises described herein.

22. Any notice under the terms of this lease shall be in writing signed by a duly authorized representative of the party giving such notice, and if given by the Government shall be addressed to the Lessor at P. O. Box 621, Honolulu, Hawaii, 96809, and if given by the Lessor shall be addressed to the Division Engineer, U. S. Army Engineer Division, Pacific Ocean, Building 96, Fort Armstrong, Honolulu, Hawaii, Attention: Real Estate Division, or at such location and to such other agency as may be mutually agreed upon by the parties hereto.

23. The Government hereby agrees that the use and enjoyment of the land herein demised shall not be in support of any policy which discriminates against anyone based upon race, creed or color.

24. The Government shall not sublease or grant any interest in the demised premises; provided, however, that the Government shall have the right to grant the use of portions of the premises for temporary activities of Governmental agencies or their contractors in which case any land rental derived from such use of the premises shall be covered into the Treasury of the State of Hawaii.

25. Subject to obtaining the prior approval of the Government, the Lessor reserves the right to grant rights or privileges to others not inconsistent with the terms of this lease affecting the whole or any portion of the demised premises.

26. The Government shall surrender possession of the premises upon the expiration or sooner termination of this lease and, if required by the Lessor, shall within sixty (60) days thereafter, or within such additional time as may be mutually agreed upon, remove its signs and other structures; provided that in lieu of removal of structures the Government may abandon

them in place. The Government shall also remove weapons and shells used in connection with its training activities to the extent that a technical and economic capability exists and provided that expenditures for removal of shells will not exceed the fair market value of the land.

27. (a) That, except as otherwise provided in this lease, any dispute concerning a question of fact arising under this lease which is not disposed of by agreement shall be decided by the Division Engineer, U. S. Army Engineer Division, Pacific Ocean, Honolulu, Hawaii, hereinafter referred to as said officer, who shall within a reasonable time reduce his decision and the reasons therefor to writing and mail or otherwise furnish a copy thereof to the Lessor. The decision of the said officer shall be final and conclusive unless, within thirty (30) days from the date of receipt of such copy, the Lessor mails or otherwise furnishes to the said officer a written appeal addressed to the Secretary of the Army. The decision of the Secretary or his duly authorized representative for the determination of such appeals shall be final and conclusive unless determined by a court of competent jurisdiction to have been fraudulent, or capricious, or arbitrary, or so grossly erroneous as necessarily to imply bad faith, or not supported by substantial evidence. In connection with any appeal proceeding under this condition, the Lessor shall be afforded an opportunity to be heard and to offer evidence in support of its appeal.

(b) This condition does not preclude consideration of law questions in connection with decisions provided for in paragraph (a) above; provided, that nothing in this condition shall be construed as making final the decision of any administrative official, representative, or board on a question of law.

(c) That all appeals under this provision shall be processed expeditiously.

28. The Government's compliance with all obligations placed on it by this lease shall be subject to the availability of funds.

29. The Lessor's compliance with any obligations which may be placed on it by this lease shall be subject to the availability of funds and/or personnel.

30. The Lessor warrants that no person or selling agency has been employed or retained to solicit or secure this lease upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the Lessor for the purposes of securing business. For breach or violation of this warranty the Government shall have the right to annul this lease without liability or in its discretion to deduct from the lease price or consideration the full amount of such commission, percentage, brokerage, or contingent fee.

31. No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this lease or to any benefit that may arise therefrom, but this provision shall not be construed to extend to this lease if made with a corporation for its general benefit.

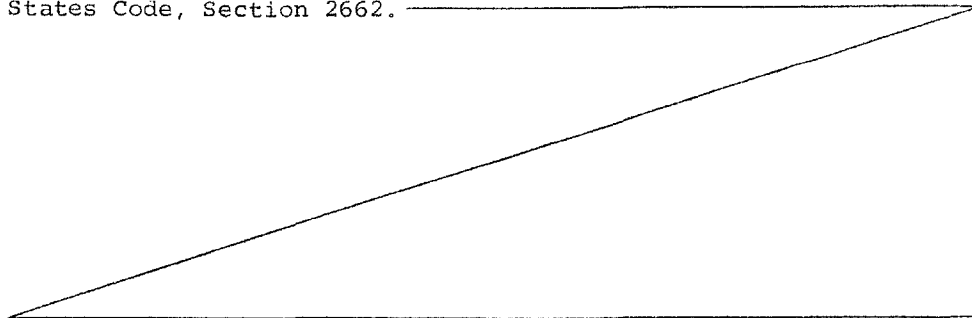
32. (a) The Government may, by written notice to the Lessor, terminate the right of the Lessor to proceed under this lease if it is found, after notice and hearing, by the Secretary of the Army or his duly authorized representative, that gratuities (in the form of entertainment, gifts, or otherwise) were offered or given by the Lessor, or any agent or

representative of the Lessor, to any officer or employee of the Government with a view toward securing a lease or securing favorable treatment with respect to the awarding or amending, or the making of any determinations with respect to the performing of such lease; provided that the existence of facts upon which the Secretary of the Army or his duly authorized representative makes such findings shall be in issue and may be reviewed in any competent court.

(b) In the event this lease is terminated as provided in paragraph (a) hereof, the Government shall be entitled (i) to pursue the same remedies against the Lessor as it could pursue in the event of a breach of the lease by the Lessor, and (ii) as a penalty in addition to any other damages to which it may be entitled by law, to exemplary damages in an amount (as determined by the Secretary of the Army or his duly authorized representative) which shall be not less than three or more than ten times the costs incurred by the Lessor in providing any such gratuities to any such officer or employee.


(c) The rights and remedies of the Government provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or under this lease.


33. This lease is not subject to Title 10, United States Code, Section 2662.




IN WITNESS WHEREOF, the parties hereto have hereunto
subscribed their names as of the date first above written.

STATE OF HAWAII


By: 
Chairman and Member
Board of Land and Natural Resources


And By: 
Member
Board of Land and Natural Resources

THE UNITED STATES OF AMERICA

By: 
Deputy Assistant Secretary of the Army (I&L)
(Installations)

APPROVED AS TO FORM:


Attorney General
State of Hawaii


Deputy Attorney General
State of Hawaii

STATE OF VIRGINIA)
) SS
COUNTY OF ARLINGTON)

On this 17th day of August, 1964, before me
appeared _____, to me personally known
who, being by me duly sworn, did say that he is the _____
DEPUTY ASSISTANT SECRETARY OF ARMY
(I&L)-Installations), and that the seal affixed to
said instrument is the seal of the Department of the Army and that the
said instrument was signed and sealed in behalf of said United States
of America under the authority therein mentioned, and said _____
acknowledged said instrument to be the free act and
deed of said United States of America.

In witness whereof I have hereunto set my hand and official seal.

Notary Public for the State of Virginia

6, 1966

NOTARY PUBLIC
Arlington County, Virginia

FORM 314 Certificate of Official Character.

Commonwealth of Virginia

County of Arlington

to wit:

I, H. BRUCE GREEN, Clerk of the Circuit Court of the County aforesaid in the State of Virginia, the
same being a Court of record, do certify that Howard V. Kempter
whose genuine signature is attached to the foregoing certificate is, and was at the time of signing the same,
a Notary Public in and for the said County, duly commissioned and qualified, residing in said County and
duly authorized, by virtue of his office, to take acknowledgements to deeds and other writings, and to
administer oaths under the laws of this State. I further certify that the official acts of the said
Howard V. Kempter are entitled to full faith and credit; that I am
well acquainted with the handwriting of the said Howard V. Kempter
and verily believe his signature to the foregoing proof or acknowledgment to be genuine; and that his
attestation is in due form of law. I further certify that the laws of Virginia do not require the im-
print of the Notary's seal to be filed with the authenticating officer.

In testimony whereof I have hereunto set my hand and affixed the seal of the said Court this
17th day of August, 1964, and in the 189th year of the Common-
wealth.

_____, Clerk.

EXHIBIT "A"

TRACT 26, MAKUA MILITARY RESERVATION

PARCEL "A"

Being a portion of the Government Lands of Makua, Kahanaiki and Keawaula, Waianae, Oahu, Hawaii.

Beginning at Government Survey Triangulation Station "MAKUA 2" on the boundary between Makua and Ohikilolo District, thence running by azimuths measured clockwise from True South:

1. 100° 20' 1,900.00 feet along the land of Ohikilolo;
Thence along the seashore in a northwesterly direction, the direct azimuth and distance being:
2. 157° 45' 9,483.40 feet;
Thence along the sea beach at highwater mark, the approximate direct azimuth and distance being:
3. 142° 45' 30" 5,756.30 feet;
4. 215° 20' 2,955.93 feet along the remainder of Government Land of Keawaula to the southwesterly boundary of Kaena Point Missile Tracking Station Site;
5. 293° 52' 30" 2,561.82 feet along Parcel C of Kaena Point Missile Tracking Station Site;
6. 258° 33' 540.47 feet along Parcel C of Kaena Point Missile Tracking Station Site to the main Waianae Range on the boundary between the districts of Waianae and Waialua;
Thence along the main Waianae Range for the next 11 courses the direct azimuths and distances being:
7. 300° 57' 10" 406.36 feet along Parcel C of Kaena Missile Tracking Station Site and the Government Land of Kuaokala;

8.	301° 26'	598.70 feet along Kuaokala Forest Reserve;
9.	298° 24'	883.70 feet along Kuaokala Forest Reserve;
10.	304° 50'	2,055.20 feet along Kuaokala Forest Reserve;
11.	336° 17'	935.50 feet along Kuaokala Forest Reserve;
12.	230° 15'	820.00 feet along the remainder of Kuaokala Forest Reserve;
13.	270° 35'	510.00 feet along the remainder of Kuaokala Forest Reserve;
14.	331° 40'	530.00 feet along the remainder of Kuaokala Forest Reserve;
15.	33° 13' 30"	224.10 feet along the remainder of Kuaokala Forest Reserve;
16.	299° 44'	545.60 feet along Kuaokala Forest Reserve;
17.	315° 56'	1,268.80 feet along Kuaokala Forest Reserve;
18.	50° 00'	1,100.00 feet along Makua Military Reservation Impact Area;
19.	62° 51' 40"	1,991.74 feet along Makua Military Reservation Impact Area;
20.	329° 28'	1,438.00 feet along Makua Military Reservation Impact Area;
21.	339° 36'	2,440.00 feet along Makua Military Reservation Impact Area;
22.	351° 08'	3,856.00 feet along Makua Military Reservation Impact Area;
23.	0° 30'	2,360.00 feet along Makua Military Reservation Impact Area to the boundary between Makua and Ohiki-lolo Districts;

Thence along the land of Ohiki-lolo, along the ridge, the direct azimuth and distance being:

24.	105° 31' 30"	1,560.10 feet to the point of beginning and containing a gross area of 1,725 ACRES, more or less.
-----	--------------	---

Excluding from the above area the following, leaving

a NET AREA OF 1,509.171 ACRES, more or less:

Federal lands	136.36 acres
Private lands	21.31 acres
Farrington Highway Extension	21.00 acres

Canadian Telecommunication Station Site	2.999 Acres
Kaena Point Missile Tracking Station Site	12.00 Acres
Kaena Point Missile Tracking Station Site	<u>22.16 Acres</u>
Total Exclusions	215.829 Acres

SUBJECT TO rights-of-way now used and occupied by Hawaiian Telephone Company, Limited, and The Hawaiian Electric Company, Limited, under rights-of-entry granted by the State of Hawaii.

PARCEL "B"

Land situated at Makua, Waianae, Oahu, Hawaii

Being all of the land quitclaimed to the Territory of Hawaii by the United States of America dated 26 January 1943, pursuant to Public Law 781-77th Congress dated 2 December 1942, and also being Tract 1 of the Makua Military Reservation.

Beginning at the southeast corner of this piece of land, from which the azimuth (measured clockwise from True South) and distance to Government Survey Triangulation Station "LOLO" is 335° 26' 07" 6519.82 feet.

Thence from said point of beginning by azimuths and distances:

1. 84° 04' 35" 610.00 feet;
2. 144° 59' 00" 460.10 feet;
3. 269° 02' 30" 832.85 feet;
4. 353° 23' 00" 330.00 feet to the point of beginning and containing an AREA OF 5.95 ACRES, more or less.

SUPPLEMENTAL AGREEMENT NO. 1
TO WITHDRAW FROM
STATE GENERAL LEASE NO. S-3848
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE OF HAWAII
U. S. LEASE, CONTRACT NO. DA-94-626-ENG-79

THIS SUPPLEMENTAL AGREEMENT NO. 1, made between the
STATE OF HAWAII, represented by its Board of Land and Natural
Resources, hereinafter called "Lessor" and the United States of
America, represented by the Secretary of the Army, hereinafter
called the "Government,"

WITNESSETH:

WHEREAS, by State General Lease No. S-3848 (U. S.
Lease, Contract No. DA-94-626-ENG-79), dated August 17, 1964,
the Lessor demised unto the Government, for military purposes,
two parcels of land designated as "Tract 26, Makua Military
Reservation" and described as follows:

PARCEL "A" being a portion of the Government
Lands of Makua, Kahanaiki and Keawaula,
Waianae, Oahu, Hawaii, containing a gross area
of 1,725 acres, more or less, and a net area of
1,509.171 acres, more or less after exclusions,
subject to rights-of-way now used and occupied
by Hawaiian Telephone Company, Limited, and The
Hawaiian Electric Company, Limited, under
rights-of-entry granted by the State of Hawaii,
and

PARCEL "B" situate at Makua, Waianae, Oahu,
Hawaii, containing an area of 5.95 acres,
more or less,

for a term ending August 16, 2029; and

WHEREAS, the Lessor desires to withdraw a portion of
the demised premises under State General Lease No. S-3848, with
no compensation to be paid by the Lessor to the Government, for
the addition to the Kaena Point State Park; and

WHEREAS, the Government is agreeable to relinquish
said portion of the premises by amendment to the said lease,
without compensation, as hereinafter set forth; and

WHEREAS, the Board at its meeting held on April 22, 1988 approved the withdrawal of land from State General Lease No. S-3848, Contract No. DA-94-626-ENG-79, as an addition to the Kaena Point State Park.

NOW, THEREFORE, the parties hereto do mutually agree as follows:

That effective immediately, the Government, for itself, its successors and assigns, does hereby surrender and yield all of its right, title, interest and estate in and to that portion of State General Lease No. S-3848, being a portion of the Government Land of Keawaula and portion of the railroad Right-of-Way in Waianae, situate at Keawaula, Waianae, Oahu, Hawaii, more particularly described in Exhibit "A" and delineated on Exhibit "B," both of which are attached hereto and made parts hereof, said exhibits being, respectively, a survey description and a survey map prepared by the Survey Division, Department of Accounting and General Services, State of Hawaii, said survey description being designated C.S.F. No. 21,036 and said survey map being designated H.S.S. Plat 2174-A; both dated August 28, 1989, and containing a gross area of 758.0 acres, more or less, and a net area of 732.768 acres, more or less, after exclusions, are deleted from the operation and effect of State General Lease No. S-3848, with no compensation, reserving, however, in favor of the Government the right to conduct and operate helicopter flights over the relinquished areas.

AND that the Lessor does hereby accept the withdrawal of said portions of lands described herein.

That except as hereinabove expressly provided, all of the conditions of said State General Lease No. S-3848, shall be and remain the same.

This lease is not subject to Title 10, United States Code, Section 2662.

IN WITNESS WHEREOF, the State of Hawaii, by its Board of Land and Natural Resources, has caused the seal of the Department of Land and Natural Resources to be hereunto affixed and the parties hereto have caused these presents to be [REDACTED] executed the 24th day of January, ~~1989~~ 1990.

STATE OF HAWAII

Approved by the Board of Land and Natural Resources at its meeting held on April 22, 1988.

By [REDACTED] Chairman and Member Board of Land and Natural Resources

THE UNITED STATES OF AMERICA

By [REDACTED]

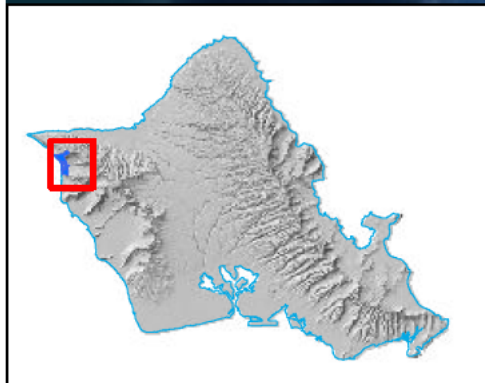
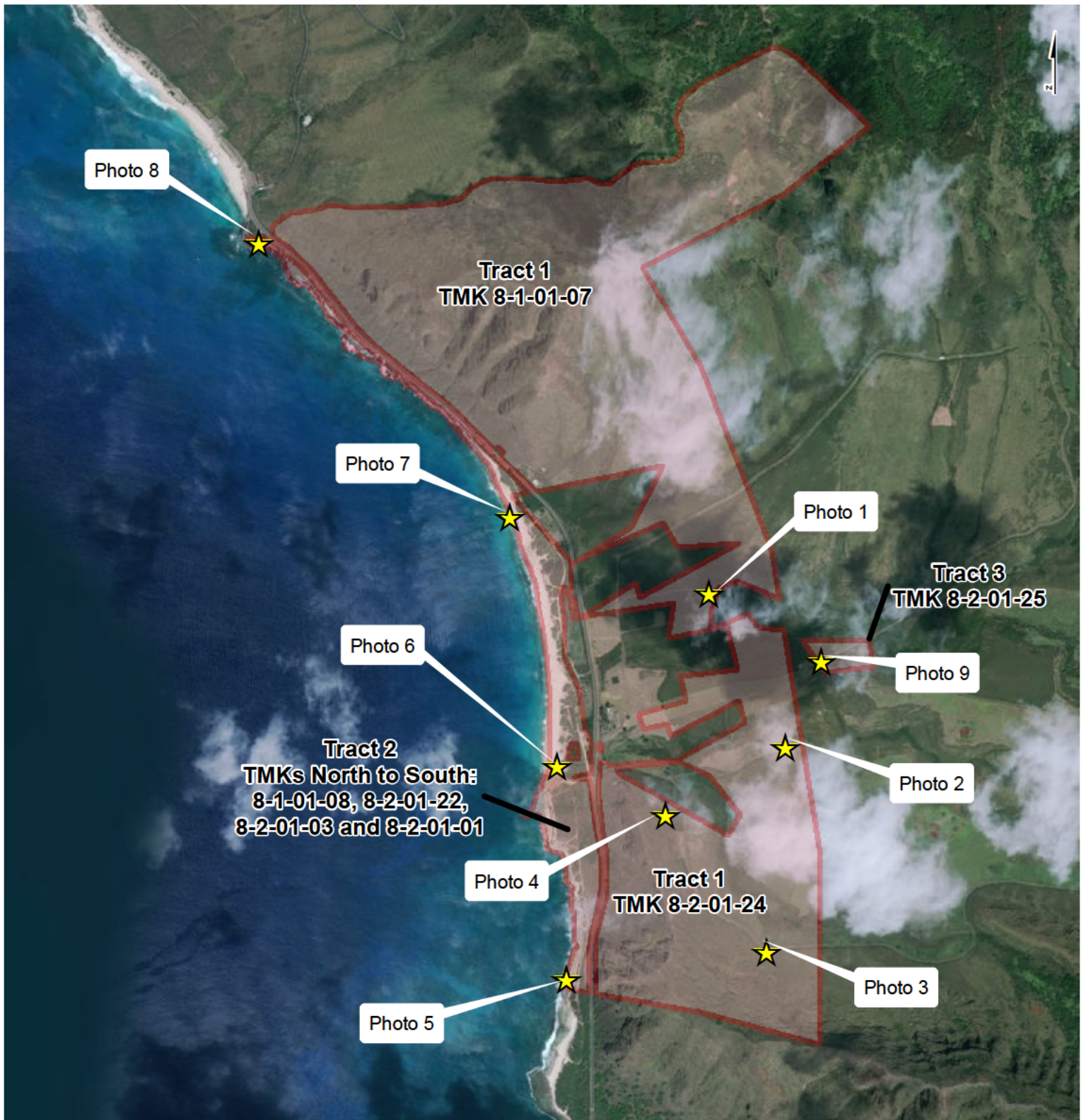
Acting Chief, Real Estate Division
U.S. Army Engineer Division,
Pacific Ocean
Corps of Engineers

APPROVED AS TO FORM:

[REDACTED]
Deputy Attorney General

Dated: December 18, 1989

APPENDIX D – SITE RECONNAISSANCE PHOTOGRAPHS



Contract No. W9128A-12-D-0005
Date: March 2017

Appendix D

Mākua Parcels Photo Directory

Environmental Condition
of Property (ECoP)
Report for U.S. Army
Land Acquisition, Oahu

Tract 1



Photograph 1 -View of northern section of Tract 1, facing north east from southern section of Tract 1 upper segment.



Photograph 2 - View of ground tactical training area, facing west from northern section of Tract 1 lower segment.



Photograph 3 - Makua Military Reservation, facing north from road on southern end of Tract 1 lower segment.



Photograph 4 - Makua Military Reservation, facing north west from center of Tract 1 lower segment.

Tract 2



Photograph 5 - Partial view of Tract 2 landscape, facing north from southern end of Tract 2.



Photograph 6 - View of muliwai (estuary or stream mouth), facing east from center of Tract 2.



Photograph 7 - View of area along beach path, facing west from central portion of Tract 2.



Photograph 8 - Partial view of Tract 2 landscape, facing south from northern end of Tract 2.

Tract 3



Photograph 9 - Water tank near western edge of Tract 3, facing east of Tracts 1 and 3.

APPENDIX E – USER QUESTIONNAIRE

**ENVIRONMENTAL SITE ASSESSMENT
USER QUESTIONNAIRE**

Project or Facility Name: Makua Properties

Facility address: Western O'ahu

Facility Tract Parcel(s): 26-1 (717 acres), 26-2 (60 acres), 26-3 (6 acres)

Type of Property Transaction: ☒ Purchase ☐ Sale ☒ Lease ☐ Exchange

1. Environmental cleanup liens that are filed or recorded against the site (40 CFR 312.25).

Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?

- ☒ I have reviewed reasonably ascertainable recorded land title records and lien records and am not aware of environmental cleanup liens against the *property*.
- ☐ I am aware of cleanup liens against the *property*, and provide the following information:

2. Activity and land use limitations (AULs) that are in place on the site or that have been filed or recorded in a registry (40 CFR 312.26 (a)(1)(v) and (vi)).

Are you aware of any AULs, such as engineering controls (e.g., engineered caps, liners, treatment systems), land use restrictions, or institutional controls in place at the *property* that are filed or recorded in a registry under federal, tribal, state or local law?

- ☐ I have reviewed reasonably ascertainable recorded land title records and lien records and am not aware of AULs in place at the *property* or that have been filed or recorded.
- ☒ I am aware of AULs associated with the *property*, and provide the following information: *endangered species and UXO.*

3. Specialized knowledge or experience of the person seeking to qualify for the LLP (40 CFR 312.28).

As the User of this ESA, do you have any specialized knowledge or experience related to the *property* or nearby properties? For example, are you involved in the same line of business as the current or former *occupants* of the *property* or an adjoining *property* so that you would have specialized knowledge of the chemicals and processes used by this type of business?

- ☒ I have no specialized knowledge or experience related to the *property* or nearby properties.
- ☐ I have specialized knowledge or experience, and provide the following related information:

**ENVIRONMENTAL SITE ASSESSMENT
USER QUESTIONNAIRE**

4. Relationship of the purchase price to the fair market value of the property if it were contaminated (40 CFR 312.29).

Does the purchase price being paid for this *property* reasonably reflect the fair market value of the *property*? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the *property*??

- ☒ The purchase price reasonably reflects the fair market of the *property*.
☐ The purchase price may not reflect the fair market value of the *property*, for the following reasons:

5. Commonly known or reasonably ascertainable information about the property (40 CFR 312.30).

Are you aware of commonly known or *reasonably ascertainable* information about the *property* that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example:

a) Do you know the past uses of the *property*? *live fire and conservation*

☒ Yes ☐ No If yes, provide info:

b) Do you know of specific chemicals that are present or once were present at the *property*?

☐ Yes ☒ No If yes, provide info:

c) Do you know of spills or other chemical releases that have taken place at the *property*?

☐ Yes ☒ No If yes, provide info:

d) Do you know of any environmental cleanups that have taken place at the *property*?

☐ Yes ☒ No If yes, provide info:

**ENVIRONMENTAL SITE ASSESSMENT
USER QUESTIONNAIRE**

e) Do you know of any environmental documents relative to the *property*?

☒ Yes ☐ No If yes, check applicable document:

- | | |
|--|---|
| <input type="checkbox"/> <i>ESA reports</i> | <input type="checkbox"/> <i>Reports regarding hydrogeologic conditions on the property or for the surrounding area</i> |
| <input type="checkbox"/> <i>Environmental compliance audit reports</i> | <input type="checkbox"/> <i>Notices or other correspondence from any government agency relating to past or current violation of environmental laws with respect to the property or relating to environmental liens encumbering the property</i> |
| <input type="checkbox"/> <i>Environmental permits (waste water, hazardous waste, etc.)</i> | <input type="checkbox"/> <i>Hazardous waste generator notices or reports</i> |
| <input type="checkbox"/> <i>Under/above-ground storage tank registration</i> | <input type="checkbox"/> <i>Geotechnical studies</i> |
| <input type="checkbox"/> <i>Underground injection systems registration</i> | <input type="checkbox"/> <i>Risk assessments</i> |
| <input type="checkbox"/> <i>Safety Data Sheets</i> | <input type="checkbox"/> <i>Recorded Activity and Land Use Limitations</i> |
| <input type="checkbox"/> <i>Community right-to-know plan</i> | |
| <input checked="" type="checkbox"/> <i>Safety plans; preparedness & prevention plans; spill prevention, countermeasures, control plans, etc.</i> | |

Checked documents are attached. ☐ Yes ☐ No

6. The degree of obviousness of the presence or likely presence of contamination at the *property*, and the ability to detect the contamination by appropriate investigation (40 CFR 312.31).

As the *user* of this *ESA*, based on your knowledge and experience related to the *property* are there any *obvious* indicators that point to the presence or likely presence of contamination at the *property*?

- ☒ I am not aware of obvious indicators of the presence or likely presence of contamination.
- ☐ I am aware of the presence or likely presence of contamination, and provide the following related information:

I have read and understand the information provided and agree and believe.

Signature: _____

Print Name: _____

Title: *Real Property Accountable officer*

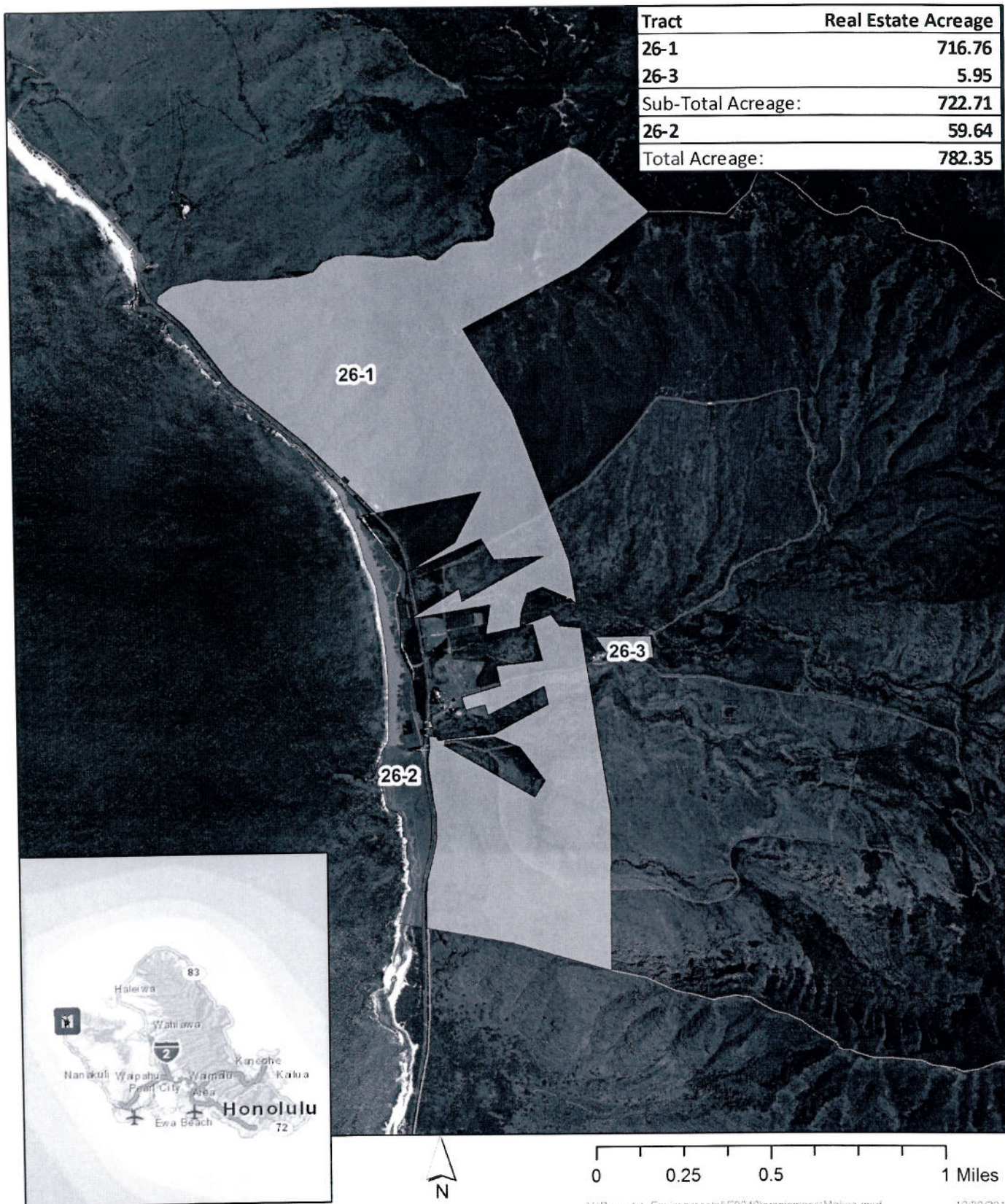
Date: *28 Mar 17*



Makua Military Reservation, State Leased Parcels

U.S. ARMY CORPS OF ENGINEERS, Honolulu District

BUILDING STRONG®



PART 2:

PHASE II ENVIRONMENTAL SITE ASSESSMENT

Section 1: Summary

A Phase I ESA has been conducted in conformance with the scope and limitations of ASTM E2247-08 and E1527-13 of the Subject Properties (Mākua Tracts 1-3), part of or adjacent to the Mākua Military Reservation.

This assessment has revealed the high likelihood of UXO as a REC associated with Tracts 1 and 3; however, specific locations of potential UXO were not identified. UXO has largely been removed from Tract 2 and the site investigated for MCs, and several studies have recommended no further action. Therefore, UXO at Tract 2 is characterized as a HREC.

No additional investigation or sampling of the Subject Properties is recommended as part of this Environmental Condition of Property (ECoP) study. Therefore, a Phase II ESA will not be conducted. The Army has conducted several studies in Mākua related to munitions constituents, and has determined that MECs associated with MMR source areas are not expected to migrate off-range at levels that pose an unacceptable risk to human or ecological receptors (EA, 2013). The Army conducts periodic reviews under the Operational Range Assessment Program and evaluates whether changed conditions may prompt a sampling effort.

PART 3:

CATEGORIZATION OF PROPERTY

Section 1: Summary

A Phase I Environmental Site Assessment (ESA) has been prepared for three tracts of real estate (Figure 1), collectively referenced as the “Mākua Tracts.” Environmental Condition of Property (ECoP) guidance³ provides for properties to be categorized into one of seven categories:

- Category 1: Areas where no release or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas).
- Category 2: Areas where only release or disposal of petroleum products has occurred.
- Category 3: Areas where release, disposal, and/or migration of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response.
- Category 4: Areas where release, disposal, and/or migration of hazardous substances has occurred, and where all remedial response actions necessary to protect human health and the environment have been taken.
- Category 5: Areas where release, disposal, and/or migration of hazardous substances has occurred, and where all remedial response actions necessary to protect human health and the environment have not yet been taken.
- Category 6: Areas where release, disposal, and/or migration of hazardous substances has occurred, but where required actions have not yet been implemented.
- Category 7: Areas that are not evaluated or require additional evaluation.

Based on the results of the Phase I ESA, the Mākua Properties can be categorized as follows:

Tracts 1 and 3: Category 5: *Areas where release, disposal, and/or migration of hazardous substances has occurred, and where all remedial response actions necessary to protect human health and the environment have not yet been taken.* Although additional investigation is not recommended as part of this ECoP study, the presence of UXO is an unknown human and environmental hazard until the site is completely cleared of UXO.

Tract 2: Category 4: *Areas where release, disposal, and/or migration of hazardous substances has occurred, and where all remedial response actions necessary to protect human health and the environment have been taken.* The site has been the subject of several UXO clearing and investigation activities, and several studies have recommended no further action.

³ USAPHC (undated), Environmental Condition of Property (ECoP) Investigations, Technical Information Paper No. [REDACTED] US Army Public Health Command.