U.S. ARMY CORPS OF ENGINEERS
REGULATORY PROGRAM
APPROVED JURISDICTIONAL DETERMINATION FORM (INTERIM)
NAVIGABLE WATERS PROTECTION RULE

I. ADMINISTRATIVE INFORMATION

Completion Date of Approved Jurisdictional Determination (AJD): 6/28/2021
ORM Number: POH-2019-00079
Associated JDs: PJD under same ORM number dated 7 August 2019
Review Area Location[1]: State/Territory: Hawaii City: North Kona County/Parish/Borough: Island of Hawaii
Center Coordinates of Review Area: Latitude 19.896 Longitude -155.7628

II. FINDINGS

A. Summary: Check all that apply. At least one box from the following list MUST be selected. Complete the corresponding sections/tables and summarize data sources.

- ☐ The review area is comprised entirely of dry land (i.e., there are no waters or water features, including wetlands, of any kind in the entire review area). Rationale: N/A or describe rationale.
- ☐ There are "navigable waters of the United States" within Rivers and Harbors Act jurisdiction within the review area (complete table in Section II.B).
- ☐ There are "waters of the United States" within Clean Water Act jurisdiction within the review area (complete appropriate tables in Section II.C).
- ☒ There are waters or water features excluded from Clean Water Act jurisdiction within the review area (complete table in Section II.D).

B. Rivers and Harbors Act of 1899 Section 10 (§ 10)[2]

§ 10 Name	§ 10 Size		§ 10 Criteria	Rationale for § 10 Determination
N/A.	N/A.	N/A	N/A.	N/A.

C. Clean Water Act Section 404

Territorial Seas and Traditional Navigable Waters ((a)(1) waters):[3]				
(a)(1) Name	(a)(1) Size		(a)(1) Criteria	Rationale for (a)(1) Determination
N/A.	N/A.	N/A.	N/A.	N/A.

Tributaries ((a)(2) waters):				
(a)(2) Name	(a)(2) Size		(a)(2) Criteria	Rationale for (a)(2) Determination
N/A.	N/A.	N/A.	N/A.	N/A.

Lakes and ponds, and impoundments of jurisdictional waters ((a)(3) waters):				
(a)(3) Name	(a)(3) Size		(a)(3) Criteria	Rationale for (a)(3) Determination
N/A.	N/A.	N/A.	N/A.	N/A.

Adjacent wetlands ((a)(4) waters):				
(a)(4) Name	(a)(4) Size		(a)(4) Criteria	Rationale for (a)(4) Determination
N/A.	N/A.	N/A.	N/A.	N/A.

[1] Map(s)/figure(s) are attached to the AJD provided to the requestor.
[2] If the navigable water is not subject to the ebb and flow of the tide or included on the District's list of Rivers and Harbors Act Section 10 navigable waters list, do NOT use this document to make the determination. The District must continue to follow the procedure outlined in 33 CFR part 329.14 to make a Rivers and Harbors Act Section 10 navigability determination.
[3] A stand-alone TNW determination is completed independently of a request for an AJD. A stand-alone TNW determination is conducted for a specific segment of river or stream or other type of waterbody, such as a lake, where upstream or downstream limits or lake borders are established. A stand-alone TNW determination should be completed following applicable guidance and should NOT be documented on the AJD Form.

D. Excluded Waters or Features

Excluded waters ((b)(1) – (b)(12)):[4]				
Exclusion Name	Exclusion Size		Exclusion[5]	Rationale for Exclusion Determination
'Auwaiakea kua Gulch and Popo'o Gulch	'Auwaiakea kua Gulch = 7874; Popo'o Gulch = 6890	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	The 345-acre AOR within the 1,701.3-acre property (TMK 3-6-8-002:050) contains two features: 'Auwaiakeakua Gulch and Popo'o Gulch. In personal communication with the Corps, the agent stated that the land in the AOR was used for grazing from around 1937 to 2015 and now lay fallow. Starting in 1991, on the western side of the parcel, a small portion was used as part of the Puu Hinai Quarry operated by the Waikoloa Development Company until around 2005. According to the January 2018 State of Hawaii Land Use District Boundaries mapping application (https://histategis.maps.arcgis.com/apps/webappviewer/index.html?id=b843c728b4cb4333b1df015fdaa84104), the AOR is within a large area zoned for agriculture. According to the State of Hawaii Land Use Commission's State Land Use Districts website, "The Agricultural District includes lands for the cultivation of crops, aquaculture, raising livestock, wind energy facility, timber cultivation, agriculture-support activities (i.e., mills, employee quarters, etc.) and land with significant potential for agriculture uses". Waikoloa Village, located approximately 2.1 miles northwest of the AOR, is the nearest urban area. The AOR is located on gently sloping grassland on the leeward slope of Mauna Kea. Based on the terrain data layer for Google Earth Pro, the elevation at the southeast corner of the AOR to the west edge of the AOR decreases by approximately 323 feet, with the center of the AOR at an elevation of approximately 1,377 feet above sea level. As stated in the delineation report (revised 8 June 2021), site investigations were conducted by the agent on 31 January and 1 February 2019 and with the Corps on 13 June 2019. In the delineation report, the consultant included information about a USGS stream gauge (No. 16759080), located at Mamalahoa Highway upstream on Popo'o Gulch approximately 2.91 miles southeast of the AOR. The USGS gauge No. 16759080 operated sporadically between 1963 to 1997. The gauge did not operate with sufficient continuity to indicate frequency of flow relative to precipitation but provided peak streamflow information following large storm events. The agent documented the site visit findings for the 'Auwaiakeakua Gulch and Popo'o Gulch in USACE ERDC Ordinary High Water Mark (OHWM) data sheets ((https://www.erdc.usace.army.mil/Media/Fact-Sheets/Fact-Sheet-

[4] Some excluded waters, such as (b)(2) and (b)(4), may not be specifically identified on the AJD form unless a requestor specifically asks a Corps district to do so. Corps districts may, in case-by-case instances, choose to identify some or all of these waters within the review area.
[5] Because of the broad nature of the (b)(1) exclusion and in an effort to collect data on specific types of waters that would be covered by the (b)(1) exclusion, four sub-categories of (b)(1) exclusions were administratively created for the purposes of the AJD Form. These four sub-categories are not new exclusions, but are simply administrative distinctions and remain (b)(1) exclusions as defined by the NWPR.

Excluded waters ((b)(1) – (b)(12)):[4]				
Exclusion Name	Exclusion Size		Exclusion[5]	Rationale for Exclusion Determination
				Article-View/Article/486085/ordinary-high-water-mark-ohwm-research-development-and-training/) and included the OHWM data sheets in the July 2019 report. The Corps reviewed the ORM database and found that the Corps reviewed the AOR, including 'Auwaiakeakua Gulch and Popo'o Gulch, in a PJD under the same Corps permit name and number. Under the Clean Water Rule, the Corps determined that the 'Auwaiakeakua Gulch and Popo'o Gulch were "Within the Corps Jurisdiction". The ORM database shows another project POH-2006-00334 (District Boundary Change for Waikoloa Mauka, LLC in South Kohala at TMK 368002016) located in the northwest end of the AOR with a permit determination of no permit required dated 11 April 2008. The Corps also reviewed ORM for POH-2006-00314 (Waikoloa Emergency Road, Waikoloa Village to Queen Kaahumanu Highway at TMK 368001037, 038 & 368002019) another project north of 'Auwaiakeakua Gulch outside the AOR. In a letter to the consultant dated 4 August 2008, the Corps stated "It is our understanding that project-related activities for the completed road did not involve the placement or discharge of dredged and/or fill material into WOUS". As shown in the project site plans submitted to the Corps in the electronic file folder, the construction activities for Waikoloa Emergency Road would have been regulated (i.e. the activities were not exempt) but since the construction activities were located outside both Gulches, Corps authorization was not required. As shown in the SSURGO data layer for Google Earth Pro, the soils in the AOR are mapped as a complex comprised of three series: 40% of Hapuna, 35% Waikui, 20% Lalamilo. The remaining 5% of the soil complex is characterized in the SSURGO data layer as lava flows. The Waikui and Lalamilo series are Haplotorrands while the Hapuna series is Duritorrands. All three are in the Torrand soils subgroup, which indicates soils with volcanic parent material (Andisols) that are found in arid areas and are typically formed under grassy or shrub vegetation. The soil layers shown in the NRCS SSURGO data layer for all three soil series do not indicate gleying. The lack of gleying in soils profiles indicates the lack of long-term presence of water needed to achieve anaerobic conditions. The hydraulic rating for all three soil series are listed as well drained. All three soil series in the AOR are listed on the NRCS Web Soil Survey application as the category of "Not Hydric". While 'Auwaiakeakua Gulch and Popo'o Gulch are not shown in the Atlas of Hawaiian Watersheds, the two features are shown on the USGS StreamStats application in the national and Hawaii data layers and in several data layers for Google Earth Pro: the USFWS NWI data layer, the Earth Point USGS topographic data layer, and the EPA My Waters data layer. Being visibly noted in multiple desktop references may indicate that flow occurs in 'Auwaiakeakua Gulch and Popo'o Gulch with sufficient frequency to be mapped. None of

Excluded waters ((b)(1) – (b)(12)):[4]				
Exclusion Name	Exclusion Size		Exclusion[5]	Rationale for Exclusion Determination
				the references reviewed showed wetlands within the AOR. ʻAuwaiakeakua Gulch within the AOR is approximately 7,874 feet long and an average of 13 feet wide. Popoʻo Gulch within the AOR is 6,890 feet long and an average of 6 feet wide. The agent observed that the height to top of bank of ʻAuwaiakeakua Gulch ranged between three and five feet and approximately 6 feet to top of bank for Popoʻo Gulch. ʻAuwaiakeakua Gulch and Popoʻo Gulch are mapped as starting on the upper slopes of Mauna Kea around 5,960 and 8,600 feet above sea level. Another feature, Waikʻi Gulch, connects to Popoʻo Gulch approximately 0.79 miles east outside the AOR. Popoʻo Gulch connects to ʻAuwaiakeakua Gulch approximately 0.19 miles west outside the AOR. As stated in the delineation report, ʻAuwaiakeakua Gulch does not discharge directly into the Pacific Ocean, but is directed beneath Queen Kaahumanu Highway through four culverts and terminates in the porous basalt on the coastal plain approximately 5.17 miles northwest of the west edge of the AOR and approximately 1.52 miles southeast of the shoreline. During the 13 June 2019 site visit, Corps staff noted four additional drainage features that connect to ʻAuwaiakeakua Gulch and one additional drainage feature that connects to Popoʻo Gulch as indicated on aerial photography and by a slight (<10%) change in slope. Since channel morphology of the five additional drainage features were even less distinct than ʻAuwaiakeakua Gulch and Popoʻo Gulch, the five features were not further evaluated or named in the prior or current JD. The agent conducted the delineation during site visits on 31 January and 1 February 2019 during the wet season in Hawaii, which is November to April. During the 31 January and 1 February 2019 agent site visits, there was no ponded or flowing water in ʻAuwaiakeakua Gulch and Popoʻo Gulch. The Corps reviewed daily weather data posted to the Weather Underground website, collected from a weather station– KHIWAIKO23, located in the center of Waikoloa Village approximately 2.1 miles northwest of the AOR. The weather station KHIWAIKO23 did not record any rain during the agent-only site visits on 31 January and 1 February 2019 nor in the two days prior to the agent-only site visits, 29 and 30 January 2019. The agent later conducted a site visit with the Corps on 13 June 2019 during the dry season. During the agent's joint site visit with the Corps on 13 June 2019, there was no flow in ʻAuwaiakeakua Gulch and Popoʻo Gulch, but several segments of ʻAuwaiakeakua Gulch were observed to contain ponded water. The weather station also did not record any precipitation on the 13 June 2019 agent and Corps site visit, nor was any rain recorded in the two days prior to the 13 June 2019 site visit. The last time the weather station had recorded rain prior to the 13 June 2019 site visit was 0.14 inches of accumulated precipitation on 5 June 2019.

Excluded waters ((b)(1) – (b)(12)):[4]				
Exclusion Name	Exclusion Size		Exclusion[5]	Rationale for Exclusion Determination
				The agent observed that both Gulches were indistinct within the AOR, lacking defined channel bank morphology with less than 20-degree change in slope from the surrounding land. The agent observed that the bed of both 'Auwaiakeakua Gulch and Popo'o Gulch was composed of sections with one of three types of substrate: partially-vegetated sections with cracked mud, sediment staining, and deposited silt, minimally-vegetated sections of water-polished basalt bedrock, and fully vegetated sections with 100% absolute cover. Cracked mud and deposited silt indicates slower velocity or ponded water, but do not reflect a specific frequency of flow or likelihood of flow relative to precipitation. Conversely, erosion to the bedrock indicates high velocity flow capable of erosion, but also does not indicate a frequency of flow or likelihood of flow relative to precipitation. Similarly, several segments of both 'Auwaiakeakua Gulch and Popo'o Gulch include small drop-offs and plunge pools, indicating high velocity flows with sufficient force to erode the feature's bed, but does not reflect a specific frequency of flow or likelihood of flow relative to precipitation. The presence of vegetation rooted in a channel bed indicates that the channel has been dry for a sufficient amount of time for the colonization of plants and does not flow with sufficient velocity, volume, or frequency to erode the roots. The agent observed that fountain grass (C. setaceus, UPL) was the only species observed in the vegetated sections of both 'Auwaiakeakua Gulch and Popo'o Gulch. Neither of the scientific names for fountain grass, Cenchrus setaceus and Pennisetum macrostachyum, were found in the USACE National Wetland Plant List and the default indicator status for plants not found on the List is Upland (UPL). Fountain grass is described by the Hawaii Invasive Species Council as "an aggressive habitat-invader…that can grow in a variety of habitats, from bare lava to rangeland" and is noted to be widespread throughout the west side of Hawaii Island. Rooted vegetation in vegetated sections of 'Auwaiakeakua Gulch and Popo'o Gulch suggests flow that does not occur with sufficient frequency to destroy and remove the roots of vegetation. Photographs provided with the delineation report are consistent with the consultant's characterization of the 'Auwaiakeakua Gulch and Popo'o Gulch within the AOR, including indistinct but continuous bed and bank and the varying sections of vegetation, bare bedrock, and cracked mud in the Gulches' beds. The definition of "intermittent" in the NWPR is "surface water flowing continuously during certain times of the year and more than in direct response to precipitation…". The definition of "ephemeral" in the NWPR is "surface water flowing or pooling only in direct response to precipitation…". Neither 'Auwaiakeakua Gulch and Popo'o Gulch were flowing during the site visits. Pooling

Excluded waters ((b)(1) – (b)(12)):[4]				
Exclusion Name	Exclusion Size		Exclusion[5]	Rationale for Exclusion Determination
				observed in sections of 'Auwaiakeakua Gulch during the joint agent-Corps site visit on 13 June 2019 during the dry season did not appear to be the result of precipitation as the nearest weather stations had not recorded precipitation in the 48 hours prior to the site visit. The agent did not know the source of the water pooled in portions of 'Auwaiakeakua Gulch. The underlying impermeable basalt could potentially have trapped flow from the last precipitation which had occurred eight days prior to the site visit on 5 June 2019. While pooling water in sections of 'Auwaiakeakua Gulch did not appear to occur in direct response to recent precipitation (within 48 hours prior), the other characteristics of the feature (e.g. rooted vegetation, poorly defined and shallow banks) do not suggest continuous flow during certain times of the year (e.g. during the agent's 31 January and 1 February 2019 site visits during the wet season). Additionally, the lack of other common characteristics of regular flow, such as sediment sorting, eroded roots, and wrack lines, were not observed at 'Auwaiakeakua Gulch. Based on this evidence, the flow in 'Auwaiakeakua Gulch does not meet the definition of "intermittent" in the NWPR; therefore, the Corps has determined that flow in 'Auwaiakeakua Gulch and Popo'o Gulch is ephemeral. The Corps has concluded that 'Auwaiakeakua Gulch and Popo'o Gulch are determined not to be tributaries based on the information above. The 'Auwaiakeakua Gulch and Popo'o Gulch are ephemeral features (b)(3) that do not contribute surface water flow to a water identified as an (a)(1) water in a typical year either directly or through one or more waters identified in (a)(2),(3) or (4) of the NWPR. In accordance with the NWPR, ephemeral, (b)(3), waters are not Waters of the U.S. and therefore not jurisdictional.

III. SUPPORTING INFORMATION

A. Select/enter all resources that were used to aid in this determination and attach data/maps to this document and/or references/citations in the administrative record, as appropriate.

☒ Information submitted by, or on behalf of, the applicant/consultant: Delineation Report, revised 8 June 2021 and an email dated 8 June 2021

This information is and is not sufficient for purposes of this AJD.

Rationale: The delineation report did not provide additional desktop references, including detailed soil information and precipitation data, which had to be acquired by the Corps.

☐ Data sheets prepared by the Corps: Title(s) and/or date(s).

☒ Photographs: Aerial and Other: Aerial photographs acquired from Google Earth Pro. Photographs are included in the delineation report.

☐ Corps site visit(s) conducted on: Date(s).

☒ Previous Jurisdictional Determinations (AJDs or PJDs): Prior PJD completed August 2019 under same ORM number as subject project

☒ Antecedent Precipitation Tool: *provide detailed discussion in Section III.B*.

- ☒ USDA NRCS Soil Survey: SSURGO data layer for Google Earth Pro and NRCS Web Soil Survey
- ☒ USFWS NWI maps: data layer for Google Earth Pro
- ☒ USGS topographic maps: Earth Point Topo Map data layer for Google Earth Pro

Other data sources used to aid in this determination:

Data Source (select)	Name and/or date and other relevant information
USGS Sources	USGS StreamStats web application
USDA Sources	N/A.
NOAA Sources	NOAA Daily Summaries precipitation web application.
USACE Sources	N/A.
State/Local/Tribal Sources	N/A.
EPA sources (specify)	EPA My Waters data layer for Google Earth

B. Typical year assessment(s): The Corps used the APT to evaluate whether precipitation was normal for the AOR during the agent's delineation report site visit dates of 31 January and 1 February 2019 and with the Corps on 13 June 2019. The APT reports indicate that the precipitation level was drier than normal during the wet season for 31 January and 1 February 2019 and normal during the dry season for 13 June 2019. As stated in the delineation report, 2017 was an unusually wet year for the South Kohala District of the Big Island, but continued dryness throughout the second half of the rainy season resulted in a moderate to severe drought over South Kohala, including the AOR. Heavy rains during Hurricane Lane in August 2018 six months prior to the agent's site visits resulted in atypical herbaceous vegetation cover in locations on the leeward side of Mauna Kea that are otherwise typically barren of vegetation. Rainfall is typically highest during the wet season from November through April.

C. Additional comments to support AJD: N/A or provide additional discussion as appropriate.