



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
 Stream Protection and Management Branch

FIELD INVESTIGATION REPORT
FI2009021102 (East Maui, Hanehoi Haiku Ditch)

Date of Field Investigation:	February 11, 2009	Time (24-hour):	0900 - 0945
CWRM Staff:	Ed Sakoda, Dean Uyeno, and Chui Ling Cheng		
Individuals Present:	Garret Hew		
Hydrologic Unit:	Hanehoi (6037)		
Stream Name:	Hanehoi Stream		

Findings:

At 0900 hours, Garret Hew and CWRM staff arrived at the Haiku Ditch bypass sluice gate on Hanehoi Stream. Following the adoption of IIFS, EMI had expressed interests in lowering the sluice gate so that the ditch could capture high flows during high rainfall events. Although not originally planned in this field visit schedule, CWRM staff decided to allow the adjustment of the Haiku Ditch bypass sluice gate on Hanehoi Stream during this field visit instead of scheduling an entirely separate trip. Similar to the previous field visits, CWRM staff documented the adjustment of the sluice gate. Staff had to ensure that the height of the sluice gate opening after adjustment would allow enough flow to pass through, and satisfy the IIFS at the selected site further downstream on Hanehoi Stream. In other words, no water from the stream can be diverted unless the IIFS is met.

CWRM staff measured the dimensions of the sluice gate opening to be 2.0 x 1.37 feet (W x H). Hanehoi Stream was relatively dry. Flow was not sufficient for taking a flow measurement.

Since the adopted IIFS of 0.63 cubic feet per second (0.41 million gallons per day) was not attained, no water from the stream could be diverted. However, the sluice gate could be lowered to a height that, during average flow conditions, allows enough flow to bypass the sluice gate to satisfy the IIFS at the selected site further downstream on Hanehoi Stream. The height of the opening was estimated by calculating the discharge in Hanehoi Stream at an arbitrary but conservative estimate of flow velocity at 1.5 cubic feet per second (0.646 million gallons per day).

Flow velocity	x	(Height of sluice gate	x	Width of sluice gate)	=	Flow at Hanehoi
1.50 feet / sec	x	(0.27 feet	x	2.0 feet)	=	0.81 CFS

If the bypass sluice gate was adjusted to a height of 0.27 feet, at a flow velocity of 1.5 feet per second, the flow was calculated to be 0.81 cubic feet per second (0.524 million gallons per day). This flow is above the IIFS adopted for Hanehoi Stream. The final height of the sluice gate opening after adjustment was 0.27 feet.

CWRM staff videotaped the event.

Staff left Hanehoi Stream at approximately 0945 hours, and continued to measure streamflow at the IIFS Site A on Puolua (Huelo) Stream. Refer to Field Investigation Report FI2009021103 (East Maui, Huelo IIFS Site A) for more information.

Image Listing: (Attach PDF of image contact sheet)

File Name:	Brief Description:
20090211012	Hanehoi Stream upstream of Haiku Ditch.
20090211013	Hanehoi Stream downstream of Haiku Ditch.
20090211014	Haiku Ditch at Hanehoi Stream.
20090211015	Haiku Ditch bypass sluice gate at Hanehoi Stream.
20090211016	Haiku Ditch bypass sluice gate at Hanehoi Stream.
20090211017	CWRM staff Dean Uyeno taking physical measurement of the Haiku Ditch bypass sluice gate at Hanehoi Stream.
20090211024	Haiku Ditch bypass sluice gate at Hanehoi Stream after adjustment.
20090211026	Haiku Ditch bypass sluice gate at Hanehoi Stream after adjustment.
20090211029	Haiku Ditch bypass sluice gate at Hanehoi Stream after adjustment.
20090211030	Haiku Ditch bypass sluice gate at Hanehoi Stream after adjustment.

GPS Listing:

Shapefiles: (List file names of all shapefiles created and a brief description of each)

<u>File Name:</u>	<u>Brief Description:</u>
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Waypoints: (List all waypoints in decimal degrees and provide a brief description of each)

<u>WP No.</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Brief Description:</u>
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Attachments:

Brief Description:

1. Image Contact Sheet

Recommendations:

IMAGE CONTACT SHEET



20090211012.jpg



20090211013.jpg



20090211014.jpg



20090211015.jpg



20090211016.jpg



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