



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

FIELD INVESTIGATION REPORT
FI2009111601 (East Maui, Makapipi)

Date of Field Investigation:	November 16, 2009	Time (24-hour):	0730 - 1600
CWRM Staff:	Ken Kawahara, Ed Sakoda, Dean Uyeno, and Chui Ling Cheng		
Individuals Present:	EMI Staff - Garret Hew, Henry Robello		
Hydrologic Unit:	Makapipi, Hanawi		
Stream Name:	Makapipi Stream, Hanawi Stream		

Findings:

Staff arrived in Maui at 0730 hours.

The purpose of this field visit was to gather additional information on upper Makapipi Stream (upstream from Hana Highway), as well as visit the EMI diversions on Makapipi and Hanawi Streams. Staff met with EMI staff at the top of Lower Nahiku Road and first drove to the EMI major diversion on the main branch of Makapipi Stream, which is also known as west Makapipi Stream.

Staff then visited the start of EMI’s Koolau Ditch on the left bank of east Makapipi Stream. A development tunnel (Makapipi tunnel 2) is located on the right bank of the stream. Water from this development tunnel is conveyed to the Koolau Ditch via a pipe crossing under a waterfall on east Makapipi Stream (see photo 20091116011). The Koolau Ditch also receives water from Kuhiwa Well (via a pipe) located further east in the hydrologic unit (see photo 20091116032). Addition water input is seepage captured in a concrete collection box and conveyed to the ditch via a pipe. As the Koolau Ditch daylights, the County of Maui Department of Water Supply diverts water from the ditch to serve the Lower Nahiku Community. This water is chlorine treated.

Heading back to Hana Highway, staff took photos of Makapipi Stream at high flow conditions. Staff also visited Wahine Mo Pond and drove to Nahiku Landing to view the mouth of Makapipi Stream at high flow.

Next, staff visited the Hanawi Pump Station on Hanawi Stream (see photo 20091116061). Maui Land & Pineapple Company used to divert water for irrigating their pineapple fields. Further upstream, staff visited EMI’s major diversion on Hanawi Stream. The diversion intake grate is located on the right bank of the stream. Staff took a short hike from the right bank of the stream to a small tributary stream where there was a minor diversion (see photo 20091116083).

Staff concluded the field visit at 1600 hours.

Image Listing: (Attach PDF of image contact sheet)

File Name:	Brief Description:
20091116001	(West or main) Makapipi Stream upstream of the EMI major diversion.
20091116002	(West or main) Makapipi Stream downstream of the EMI major diversion.
20091116003	(West or main) Makapipi Stream downstream of the EMI major diversion.
20091116004	EMI major diversion at (West or main) Makapipi Stream.
20091116007	Small bridge at the EMI major diversion on (West) Makapipi Stream.
20091116008	Seepage captured at a collection box near the East Makapipi Stream.
20091116009	Collection box that captures seepage and conveys the water to the EMI Koolau Ditch (tunnel).
20091116011	Waterfall on East Makapipi Stream.
20091116012	Waterfall on East Makapipi Stream.
20091116013	Pipe located below the waterfall (see photo 20091116012) conveying water from a development tunnel to the Koolau Ditch (tunnel).
20091116015	Pipe conveying water from Kuhiwa Well to the start of the Koolau Ditch (tunnel).
20091116016	Pipe located below the waterfall (see photo 20091116012) conveying water from a development tunnel to the Koolau Ditch (tunnel).
20091116018	Pipe conveying water from Kuhiwa Well to the start of the Koolau Ditch (tunnel).
20091116021	Start of the Koolau Ditch (tunnel) near East Makapipi Stream.
20091116023	Development tunnel – Makapipi tunnel 2.
20091116027	East Makapipi Stream.
20091116032	Right bank of East Makapipi Stream. Kuhiwa Well is located further east.
20091116033	East Makapipi Stream.

20091116037	East Makapipi Stream. The pipes above the stream convey water from Kuhiwa Well to the Koolau Ditch.
20091116039	County pipeline diverting water from the Koolau Ditch to the Nahiku Community.
20091116041	County pipeline diverting water from the Koolau Ditch to the Nahiku Community.
20091116044	County control water tank.
20091116046	Makapipi Stream (at high flow) upstream from Hana Highway.
20091116047	Makapipi Stream (at high flow) downstream from Hana Highway.
20091116049	Wahine Mo Pond on Makapipi Stream at high flow.
20091116050	Wahine Mo Pond on Makapipi Stream at high flow.
20091116051	Wahine Mo Pond on Makapipi Stream at high flow.
20091116052	Wahine Mo Pond on Makapipi Stream at high flow.
20091116053	Outlet of the unnamed pond downstream from Une Pond.
20091116055	Makapipi coast.
20091116056	Mouth of Makapipi Stream at high flow.
20091116057	Mouth of Makapipi Stream at high flow.
20091116058	Mouth of Makapipi Stream at high flow.
20091116059	Makapipi coast.
20091116061	Hanawi Pump.
20091116063	Hanawi Stream (at high flow) upstream from Hana Highway.
20091116064	Hanawi Stream (at high flow) at Hana Highway.
20091116066	EMI major diversion on Hanawi Stream.
20091116067	EMI major diversion on Hanawi Stream.
20091116072	EMI major diversion intake grate on Hanawi Stream.
20091116075	EMI major diversion on Hanawi Stream.
20091116082	EMI minor diversion on a tributary of Hanawi Stream.
20091116083	Tributary of Hanawi Stream.
20091116088	This flume was used to measure the amount of water diverted by the Nahiku Pump.

GPS Listing:

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

<u>File Name:</u>	<u>Brief Description:</u>

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>

Attachments:

Brief Description:

- Image Contact Sheet

Recommendations:

IMAGE CONTACT SHEET



20091116001.jpg



20091116002.jpg



20091116003.jpg



20091116004.jpg



20091116007.jpg



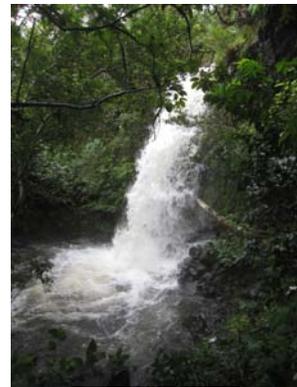
20091116008.jpg



20091116009.jpg



20091116011.jpg



20091116012.jpg



20091116013.jpg



20091116015.jpg



20091116016.jpg

IMAGE CONTACT SHEET



20091116018.jpg



20091116021.jpg



20091116023.jpg



20091116027.jpg



20091116032.jpg



20091116033.jpg



20091116037.jpg



20091116039.jpg



20091116041.jpg



20091116044.jpg



20091116046.jpg



20091116047.jpg

IMAGE CONTACT SHEET



20091116049.jpg



20091116050.jpg



20091116051.jpg



20091116052.jpg



20091116053.jpg



20091116055.jpg



20091116056.jpg



20091116057.jpg



20091116058.jpg



20091116059.jpg



20091116061.jpg



20091116063.jpg

IMAGE CONTACT SHEET



20091116064.jpg



20091116066.jpg



20091116067.jpg



20091116072.jpg



20091116075.jpg



20091116082.jpg



20091116083.jpg



20091116088.jpg