

Below
lala kea
diversion
11ft 8in

Staff gauge
Left 1.5
bent

Staff gauge
Right 0.8 ft
Hi'iwai A

Hi'iwi
Iokepa
Kili

FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
Surface Velocity² = 6/10ths Depth x 2
Bottom Velocity³ = 6/10ths Depth / 2

BANK
FULL

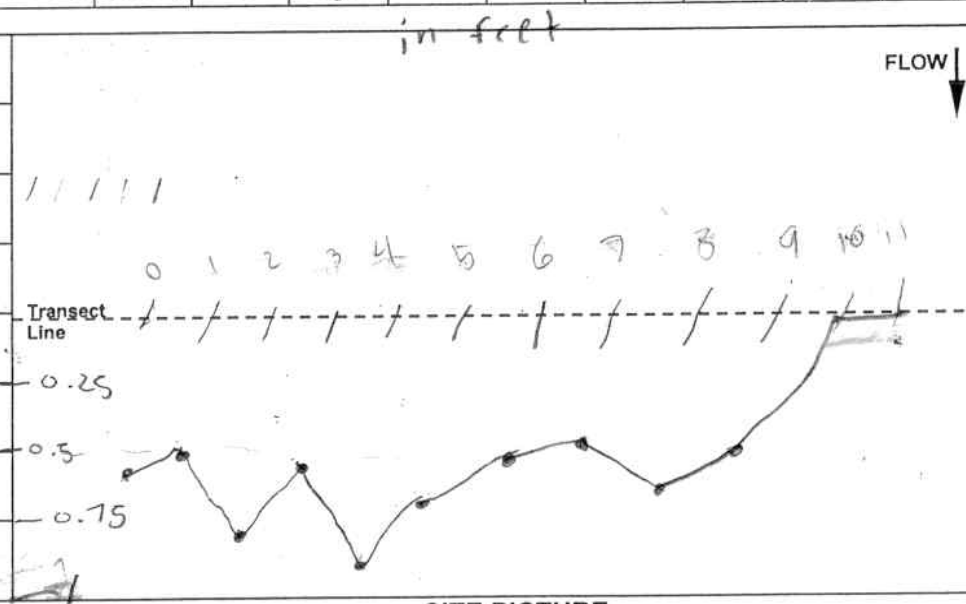
STREAM EDGE

STREAM EDGE

BANK
FULL

Stream Edge Width (feet)	0ft	1ft	2ft	3ft	4ft	5ft	6ft	7ft	8ft	9ft	10ft	11ft							
Stream Edge Depth (feet)	.55	0.5	0.8	0.6	0.9	0.6	0.5	0.4	0.6	0.5	0	0							
Flow Rate Width (ft/sec)																			
Flow Rate Depth (ft/sec)																			
Substrate/ % Vegetation																			
% Plant Coverage																			
Mean Velocity ¹ (ft/sec)	-0.13	0.12	0.01	0.04	0.01	0.01	0.04	0.08	0.04	0.01	0	0							
Surface Velocity ² (ft/sec)	-0.08	0.30	0.03	0.02	0.02	0.04	0.06	0.11	0.07	0.00	0	0							
Bottom Velocity ³ (ft/sec)	-0.18	0.05	0.01	0.01	0.04	0.01	0.06	0.11	0.04	0.04	0	0							

DATE	11-8-2004	HYDROLAB			
TIME	11:00 a.m.	WIDTH (feet)	2.7		
OBSERVER	Hi'iwai A	TEMPERATURE (°C)	21.73°C	21.97°C	
REACH		DISSOLVED OXYGEN (mg/L)	9.08	9.11	
TRANSECT#		CONDUCTIVITY (mS/cm)	0.075	0.076	
DAR_CODE		pH	7.69	7.80	
STREAM		TURBIDITY (NTU)			
TRIBUTARY		TOTAL SUSPENDED SOLIDS (mg/L)			



SITE PICTURE

Nopili

J.D.

Kally
went
Leitchu

FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2

Lakes

Near staff
gauge

11 ft 7 in

BANK
FULL

STREAM EDGE

STREAM EDGE

BANK
FULL

Stream Edge Width (feet)	0 ft	1 ft	2 ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ft							
Stream Edge Depth (feet)	0.2	0.78	0.6	0.7	0.5	0.65	0.9	0.75	0.6	0.65	0.4	0.6							
Flow Rate Width (ft/sec)																			
Flow Rate Depth (ft/sec)																			
Substrate/ % Vegetation																			
% Plant Coverage																			
Mean Velocity ¹ (ft/sec)	-0.18	0.07	0.19	0.04	0.01	-0.02	-0.02	-0.02	-0.03	-0.03	-0.05	-0.02							
Surface Velocity ² (ft/sec)	-0.10	0.06	0.41	0.07	0.01	-0.02	-0.01	-0.04	-0.10	0.19	-0.08	-0.03							
Bottom Velocity ³ (ft/sec)	-0.20	-0.13	0.23	0.02	-0.02	0.02	-0.02	-0.06	-0.06	-0.01	-0.23	-0.03							

DATE	HYDROLAB			
TIME				
OBSERVER				
REACH				
TRANSECT#				
DAR_CODE				
STREAM				
TRIBUTARY				

Nov 8, 2004

12:39 PM

Nopili

WIDTH (feet)

TEMPERATURE (°C)

21.95°C

DISSOLVED OXYGEN (mg/L)

8.96

TRANSECT#

CONDUCTIVITY (mS/cm)

0.075

DAR_CODE

pH

7.83

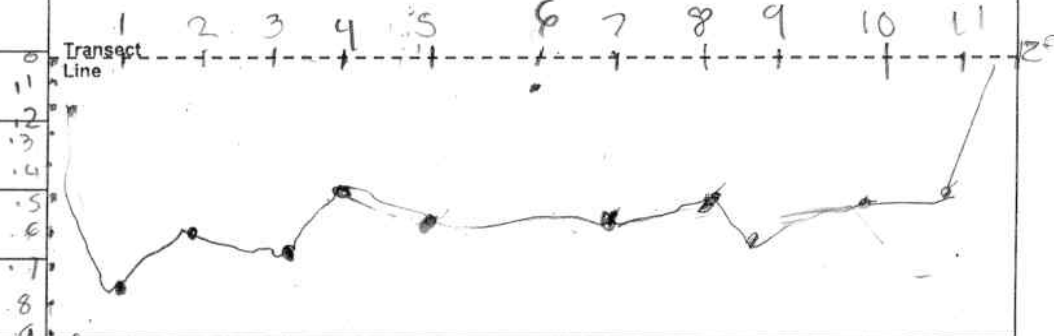
STREAM

TURBIDITY (NTU)

TRIBUTARY

TOTAL SUSPENDED SOLIDS (mg/L)

FLOW

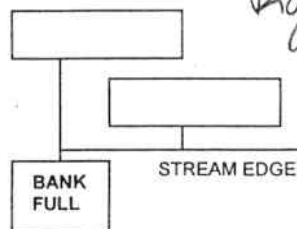


Left staff gage: 0.8 ft
Right staff gage: 0.8 ft

Leina 210
Kawakapu
Kaleo

FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
Surface Velocity² = 6/10ths Depth x 2
Bottom Velocity³ = 6/10ths Depth / 2



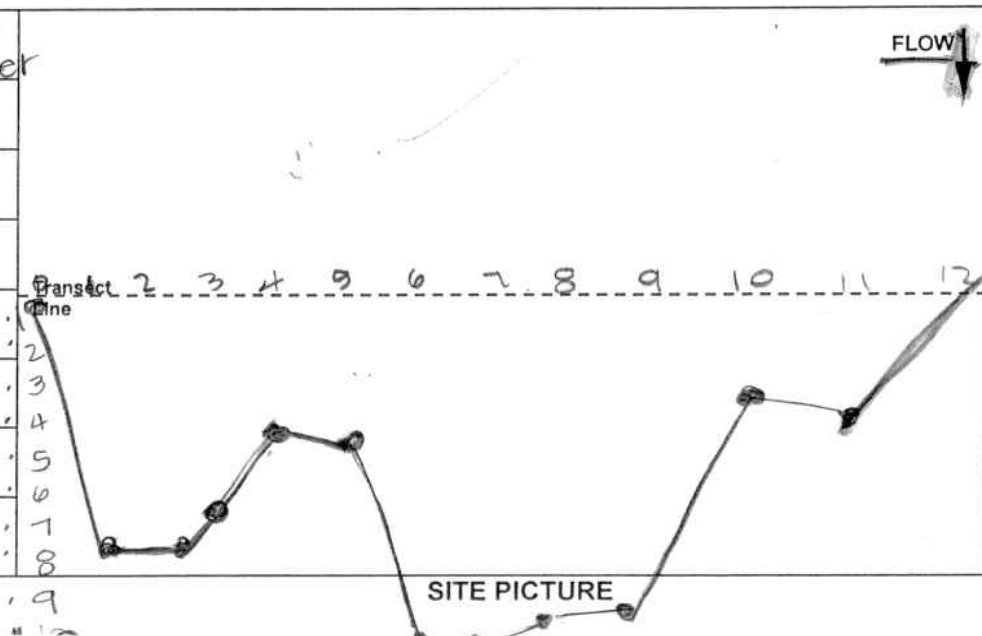
11' 8"

STREAM EDGE

BANK FULL

	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft						
Stream Edge Width (feet)	0	1	2	3	4	5	6	7	8	9	10	11						
Stream Edge Depth (feet)	0.8	0.75	0.7	0.45	0.5	1	1.5	0.9	0.9	0.35	0.5							
Flow Rate Width (ft/sec)																		
Flow Rate Depth (ft/sec)																		
Substrate/ % Vegetation																		
% Plant Coverage																		
Mean Velocity ¹ (ft/sec)	0	-0.20	0.00	0.01	-0.05	0.00	-0.01	-0.03	0.08	-0.03	0.05	0.06						
Surface Velocity ² (ft/sec)	0	0.16	0.50	0.20	0.04	0.02	-0.02	0.04	0.05	0.07	0.05	0.06						
Bottom Velocity ³ (ft/sec)	0	0.17	0.04	0.03	0.03	0.08	-0.06	-0.08	0.12	-0.04	0.08	0.10						

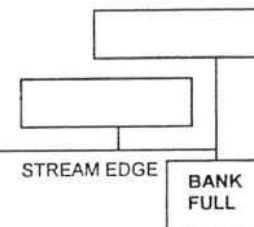
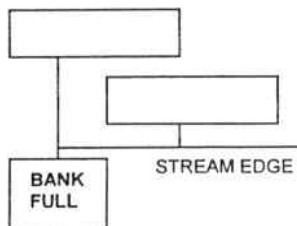
DATE NOV 8, 2004	Flowing HYDROLAB stagnant water
TIME 2:00 p.m.	WIDTH (feet) 1 2
OBSERVER H. H. Wai B	TEMPERATURE (°C) 21.5°C 23.68°C
REACH	DISSOLVED OXYGEN (mg/L) 9.67 8.65
TRANSECT#	CONDUCTIVITY (mS/cm) 0.075 0.080
DAR_CODE	pH 7.66 8.73
STREAM	TURBIDITY (NTU)
TRIBUTARY	TOTAL SUSPENDED SOLIDS (mg/L)



gage level = 0.85 ft

FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2



Stream Edge Width (feet)	7.3 ^{ft}	8.2 ^{ft}	9.0 ^{ft}	10.0 ^{ft}	11.0 ^{ft}	12.0 ^{ft}	13.0 ^{ft}	14.0 ^{ft}	15.0 ^{ft}	16.0 ^{ft}	16.4 ^{ft}						
Stream Edge Depth (feet)		0.8 ^{ft}	0.2 ^{ft}	1.5 ^{ft}	1.0 ^{ft}	1.0 ^{ft}	1.3 ^{ft}	1.6 ^{ft}	1.2 ^{ft}	1.2 ^{ft}							
Flow Rate Width (ft/sec)																	
Flow Rate Depth (ft/sec)																	
Substrate/ % Vegetation																	
% Plant Coverage																	
Mean Velocity ¹ (ft/sec)		-0.20	-0.18	0.02	0.01	-0.02	0.04	0.02	0.02	-0.13							
Surface Velocity ² (ft/sec)		-0.20	-0.09	-0.08	0.03	0.02	0.29	0.02	0.24	-0.05							
Bottom Velocity ³ (ft/sec)		-0.26	-0.12	-0.09	-0.08	-0.12	-0.07	-0.09	-0.10	-0.18							

DATE Dec 1 st , 2004	HYDROLAB				FLOW ↓
TIME 11:46 am	WIDTH (feet)				
OBSERVER Iwan Kakea, Kaoris Choe	TEMPERATURE (°C)				
REACH Below diversion	DISSOLVED OXYGEN (mg/L)				
TRANSECT#	CONDUCTIVITY (mS/cm)				
DAR_CODE	pH				
STREAM Iolalea	TURBIDITY (NTU)				
TRIBUTARY	TOTAL SUSPENDED SOLIDS (mg/L)				

FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2

BANK
FULL

STREAM EDGE

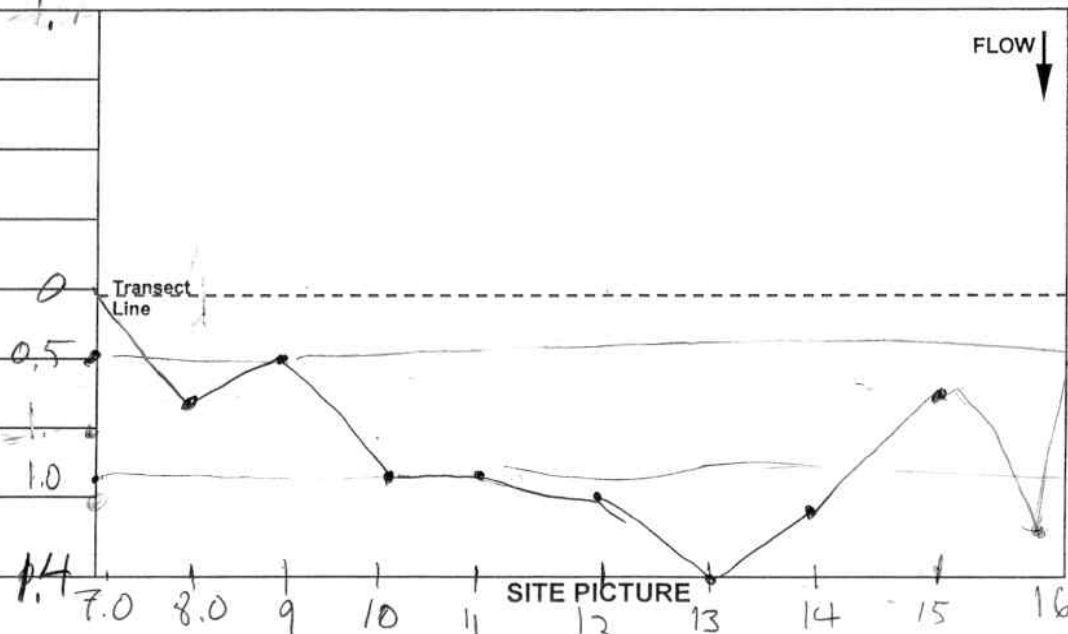
Staff Gage = 0.9

BANK
FULL

STREAM EDGE

Stream Edge Width (feet)	7.0 ft	8.20 ft	9.0 ft	10.0 ft	11 ft	12 ft	13 ft	14 ft	15 ft	16 ft	16.4								
Stream Edge Depth (feet)		0.8 ft	0.5 ft	1.0 ft	1.0 ft	1.1 ft	1.4 ft	1.2	0.8 ft	1.3 ft									
Flow Rate Width (ft/sec)																			
Flow Rate Depth (ft/sec)																			
Substrate/ % Vegetation																			
% Plant Coverage																			
Mean Velocity ¹ (ft/sec)		0.20	0.23	0.21	0.15	0.16	0.05	0.02	0.12	0.17									
Surface Velocity ² (ft/sec)		0.21	0.22	0.20	0.15	0.12	0.27	0.19	0.02	0.13									
Bottom Velocity ³ (ft/sec)		0.23	0.26	0.19	0.32	0.18	0.19	0.09	0.24	0.27									

DATE Dec 1, 2000	HYDROLAB			
TIME 1:52 p.m.	WIDTH (feet)			
OBSERVER Ari S. Jacob R. Jmily	TEMPERATURE (°C)			
REACH Brow diversion	DISSOLVED OXYGEN (mg/L)			
TRANSECT#	CONDUCTIVITY (mS/cm)			
DAR_CODE	pH			
STREAM Eakaka	TURBIDITY (NTU)			
TRIBUTARY	TOTAL SUSPENDED SOLIDS (mg/L)			



Mean Velocity¹ = 6/10ths Depth
Surface Velocity² = 6/10ths Depth x 2
Bottom Velocity³ = 6/10ths Depth / 2

A diagram showing a cross-section of a stream bed. A horizontal line represents the stream bed. Above this line, on the left, is a rectangular box labeled "BANK FULL". To the right of this box, the stream bed line continues. Above this line, on the right, is another rectangular box. Below the stream bed line, on the right, is the text "STREAM EDGE".

[illegible]

DATE	HYDROLAB				Turbidity (Lakea Diversion)		FLOW
12-02-04	ocean				1.9 NTU		
TIME 9:12 a.m.	WIDTH (feet)						
OBSERVER Kaori, Iwa, Ahi Kahea, Chloe, + Jacob	TEMPERATURE (°C)	20.71 °C		21.55 °C			
REACH at ocean	DISSOLVED OXYGEN (mg/L)	7.0 mg/L		7.40 mg/L			
TRANSECT#	CONDUCTIVITY (mS/cm)	0.206 mS/cm		12.17 mS/cm			
DAR_CODE	pH	7.07 PH		7.15 PH			
STREAM Waialoa	TURBIDITY (NTU)	3.15 NTU		3.45 NTU			
TRIBUTARY	TOTAL SUSPENDED SOLIDS (mg/L)						

Flowing below
Lalakea Diversion
1330 hrs

FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
Surface Velocity² = 6/10ths Depth x 2
Bottom Velocity³ = 6/10ths Depth / 2

Feb 10, 2005

BANK FULL	STREAM EDGE																BANK FULL
	Wet	2	3	4	5	6	7										
Stream Edge Width (feet)	0.75	1.7	3.0	4.2	5.4	6.6	8.0	8.8									
Stream Edge Depth (feet)	0.9	0.4	0.9	1.3	1.7	0.8	0.7										
Flow Rate Width (ft/sec)																	
Flow Rate Depth (ft/sec)																	
Substrate/ % Vegetation																	
% Plant Coverage																	
Mean Velocity ¹ (ft/sec)	-0.08	-0.08	-0.05	0.04	0.12	0.10	-0.02										
Surface Velocity ² (ft/sec)	-0.10	-0.09	0.02	0.26	0.37	0.13	-0.04										
Bottom Velocity ³ (ft/sec)	-0.09	-0.14	-0.13	0.02	0.04	-0.05	0.09										

DATE 2/10/05	HYDROLAB			
TIME 1307	WIDTH (feet)			
OBSERVER DK, RE, DP	TEMPERATURE (°C)	18.54		
REACH	DISSOLVED OXYGEN (mg/L)	5.51		
TRANSECT# lower gage	CONDUCTIVITY (mS/cm)	0.077		
DAR_CODE	pH	6.78		
STREAM Waihoa	TURBIDITY (NTU)			
TRIBUTARY Lalakea	TOTAL SUSPENDED SOLIDS (mg/L)			

Transect Line

New Gage Height 0.94 Ft

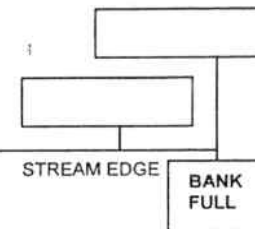
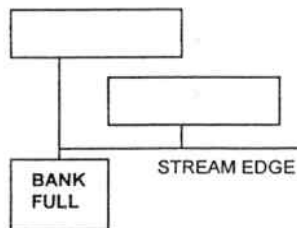
old gage is trashed

FLOW ↓

Lalakea
Tunnel

FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
Surface Velocity² = 6/10ths Depth x 2
Bottom Velocity³ = 6/10ths Depth / 2



Stream Edge Width (feet)	1	2	3																
Stream Edge Depth (feet)	1.04	1.0	1.0																
Flow Rate Width (ft/sec)																			
Flow Rate Depth (ft/sec)																			
Substrate/ % Vegetation																			
% Plant Coverage																			
Mean Velocity ¹ (ft/sec)	0.37	0.31	1.37																
Surface Velocity ² (ft/sec)	0.32	0.26	1.52																
Bottom Velocity ³ (ft/sec)	0.28	0.11	1.37																

DATE Feb 10, 2005	HYDROLAB			FLOW ↓ Gage Height In Tunnel: 0.94 ft Transect Line
TIME 1308	WIDTH (feet)			
OBSERVER RE/DP/PK	TEMPERATURE (°C)			
REACH Presby	DISSOLVED OXYGEN (mg/L)			
TRANSECT#	CONDUCTIVITY (mS/cm)			
DAR_CODE	pH			
STREAM Lalakea-Tunnel	TURBIDITY (NTU)			
TRIBUTARY	TOTAL SUSPENDED SOLIDS (mg/L)			

FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2

BANK
FULL

STREAM EDGE

BANK
FULL

STREAM EDGE

Stream Edge Width (feet)																			
Stream Edge Depth (feet)																			
Flow Rate Width (ft/sec)																			
Flow Rate Depth (ft/sec)																			
Substrate/ % Vegetation																			
% Plant Coverage																			
Mean Velocity ¹ (ft/sec)																			
Surface Velocity ² (ft/sec)																			
Bottom Velocity ³ (ft/sec)																			

DATE 2/10/05	HYDROLAB			
TIME 1313	WIDTH (feet)			
OBSERVER DK, RE, DP	TEMPERATURE (°C)	18.56		
REACH	DISSOLVED OXYGEN (mg/L)	5.33		
TRANSECT# upper cove	CONDUCTIVITY (mS/cm)	0.077		
DAR_CODE 8124407	pH	6.79		
STREAM Willow	TURBIDITY (NTU)			
TRIBUTARY Latoken	TOTAL SUSPENDED SOLIDS (mg/L)			

Above Diversion

FLOW ↓

Transect
Line

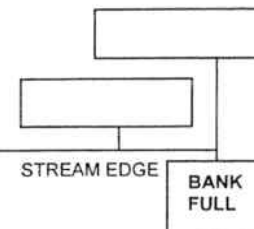
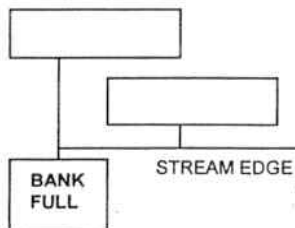
SITE PICTURE

Water gage: 1.2 Ft

FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2

Blow diversion



Stream Edge Width (feet)	6.7ft	7.7ft	9ft	10ft	11ft	12ft	13ft	14ft	15ft	16ft	16.4ft - cm 6						
Stream Edge Depth (feet)	0	1.6ft	0.8ft	1.2ft	1.5ft	1.5ft	1.9ft	1.2ft	1.2ft	1.5ft	0						
Flow Rate Width (ft/sec)																	
Flow Rate Depth (ft/sec)																	
Substrate/ % Vegetation																	
% Plant Coverage																	
Mean Velocity ¹ (ft/sec)	0	0.40	0.10	-0.09	-0.01	0.20	0.24	0.40	0.20	-0.15							
Surface Velocity ² (ft/sec)		0.44	0.19	0.16	0.28	0.60	1.05	1.0	0.65	0.1							
Bottom Velocity ³ (ft/sec)		-0.03	0.07	-0.01	0.06	-0.18	-0.13	-0.1	-0.20	-0.7							

DATE	2-14-05 (Feb)	HYDROLAB		
TIME	11:50am	WIDTH (feet)		
OBSERVER	Hi'i, IK, IA, JA Hi'iwai A	TEMPERATURE (°C)	17.34	
REACH		DISSOLVED OXYGEN (mg/L)	5.92mg/L	
TRANSECT#		CONDUCTIVITY (mS/cm)	0.58mg/cm	
DAR_CODE		pH	6.74	
STREAM	Iaia Kea	TURBIDITY (NTU)	4.9	P.B. Jr
TRIBUTARY		TOTAL SUSPENDED SOLIDS (mg/L)		

FLOW ↓

Transect Line

FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2

BANK
FULL

STREAM EDGE

BANK
FULL

STREAM EDGE

Tunnel *Turbulent*

Stream Edge Width (feet)	1	2	3																
Stream Edge Depth (feet)	1.4	1.4	1.3																
Flow Rate Width (ft/sec)																			
Flow Rate Depth (ft/sec)																			
Substrate/ % Vegetation																			
% Plant Coverage																			
Mean Velocity ¹ (ft/sec)	1.24	1.28	2.27																
Surface Velocity ² (ft/sec)	0.40	0.26	2.05																
Bottom Velocity ³ (ft/sec)	1.8	0.38	3.22																

DATE 2-14-05	HYDROLAB			FLOW ↓ <i>Lalakee Gaye Tunnel</i> Height of Gage = 1.19 ft
TIME 1:31 PM	WIDTH (feet)			
OBSERVER <i>Karly, 15.0, 2</i> <i>Lalakee, 15.0, 2</i>	TEMPERATURE (°C)	17.63		
REACH	DISSOLVED OXYGEN (mg/L)	5.88	5.71	
TRANSECT#	CONDUCTIVITY (mS/cm)	0.058		
DAR_CODE	pH	6.66		
STREAM <i>Lalakee tunnel</i>	TURBIDITY (NTU)	4.4		
TRIBUTARY	TOTAL SUSPENDED SOLIDS (mg/L)			

Kanu

Hihiwai

Hihiwai

FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2

BANK
FULL

STREAM EDGE

BANK
FULL

STREAM EDGE

Stream Edge Width (feet)	7.3	8ft	9ft	10ft	11ft	12ft	13ft	14ft	15ft	16ft	16.6								
Stream Edge Depth (feet)	0	1.2ft	0.8ft	1.6ft	1.4ft	1.8ft	2.0ft	1.9ft	1.2ft	1.5ft	0ft								
Flow Rate Width (ft/sec)																			
Flow Rate Depth (ft/sec)																			
Substrate/ % Vegetation																			
% Plant Coverage																			
Mean Velocity ¹ (ft/sec)	0.15	0.01		-0.18	0.08	-0.14	-0.25	-0.3	0.19	0.05									
Surface Velocity ² (ft/sec)	0.8	0.15		0.30	0.32	0.21	0.38	0.95	0.70	0.40									
Bottom Velocity ³ (ft/sec)	0.01	0.00		0.2	-0.22	-0.17	-0.14	0.12	-0.18	0.10									

DATE 2/14/2009	HYDROLAB		
TIME 3:35 pm	WIDTH (feet)	Stream	Pool
OBSERVER Leinadia	TEMPERATURE (°C)	17.78	20.82
REACH	DISSOLVED OXYGEN (mg/L)	5.93	6.77
TRANSECT#	CONDUCTIVITY (mS/cm)	0.057	0.074
DAR_CODE	pH	6.70	7.76
STREAM Lohalea	TURBIDITY (NTU)		
TRIBUTARY	TOTAL SUSPENDED SOLIDS (mg/L)		

stream gage

1.18 ft.

FLOW ↓

Transect Line

FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2

Leinaala
 Kawaikapu
 Iliana
 Kili
 Kalo

Hihina

22.5

2.1

BANK FULL

STREAM EDGE

STREAM EDGE

BANK FULL

Stream Edge Width (feet)	22.5	20ft	18ft	16ft	14ft	13ft	12ft	11ft	10ft	9ft	8ft	7ft	6ft	5ft	4ft			
Stream Edge Depth (feet)	0	0.6ft	0.5	0.85	0.5	1.7	1.7	1.8	1.8	1.9	1.7	1.5	1.6	1.2	1.2			
Flow Rate Width (ft/sec)																		
Flow Rate Depth (ft/sec)																		
Substrate/ % Vegetation																		
% Plant Coverage																		
Mean Velocity ¹ (ft/sec)	0	0.01	-0.03	-0.04	0.01	0.07	0.15	0.33	0.43	0.45	0.54	0.55	0.79	0.15	-0.06			
Surface Velocity ² (ft/sec)	0	0.03	-0.04	-0.05	0.03	0.20	0.38	0.38	0.35	0.43	0.61	0.66	0.40	0.21	0.25			
Bottom Velocity ³ (ft/sec)	0	0.04	-0.03	-0.04	-0.03	-0.05	0.04	0.04	0.15	0.10	0.11	0.13	0.10	0.38	0.15			

DATE 2/19/2008	HYDROLAB			Water Qual.		FLOW ↓
TIME 10:06 am	WIDTH (feet)	Stream Pool	Stream			
OBSERVER Leinaala Kili, Iliana Kalo, Kawaikapu	TEMPERATURE (°C)	20.49°	20.53°			
REACH	DISSOLVED OXYGEN (mg/L)	5.45	6.14			
TRANSECT#	CONDUCTIVITY (mS/cm)	0.157	0.158			
DAR_CODE	pH	7.52	7.89			
STREAM Hihina	TURBIDITY (NTU)	1.30				
TRIBUTARY	TOTAL SUSPENDED SOLIDS (mg/L)					

Transect Line
22.5
22.0
21.5
21.0
20.5
20.0
19.5
19.0
18.5
18.0
17.5
17.0
16.5
16.0
15.5
15.0
14.5
14.0
13.5
13.0
12.5
12.0
11.5
11.0
10.5
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.2

FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2

23

3.5

BANK FULL

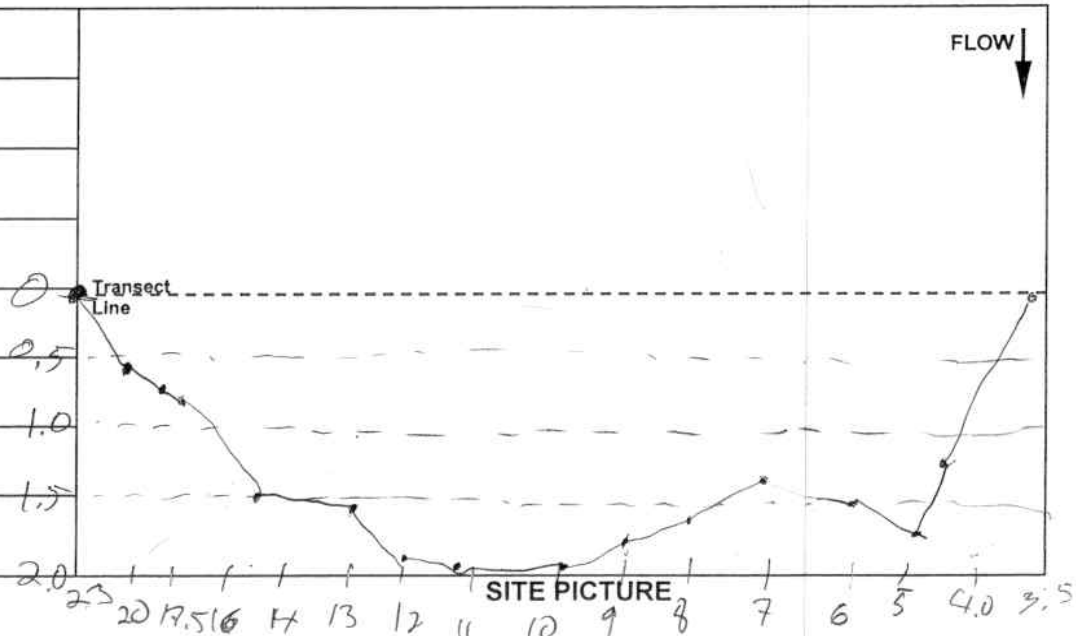
STREAM EDGE

STREAM EDGE

BANK FULL

Stream Edge Width (feet)	23ft	20.0	17.5	16.0	14.0	13.0	12.0	11.0	10.0	9.0	8.0	7.0	6.0	5.0	4.0			
Stream Edge Depth (feet)	0	0.6	0.7	1.0	1.5	1.6	1.8	1.8	1.4	1.7	1.6	1.6	1.5	1.3	1.2			
Flow Rate Width (ft/sec)	0																	
Flow Rate Depth (ft/sec)	0																	
Substrate/ % Vegetation																		
% Plant Coverage																		
Mean Velocity ¹ (ft/sec)	0	-0.05	-0.02	-0.02	0.05	0.18	0.22	0.27	0.34	0.66	0.34	0.48	0.32	0.22	-0.07			
Surface Velocity ² (ft/sec)	0	-0.08	-0.02	0.03	0.6	0.16	0.25	0.46	0.40	0.55	0.58	0.56	0.55	0.23	0.17			
Bottom Velocity ³ (ft/sec)	0	-0.06	-0.03	-0.04	0.07	-0.06	0.02	-0.03	0.03	0.14	0.20	0.15	0.04	0.03	0.12			

DATE 2/15/2009	HYDROLAB		
	Pool	Riffle	
TIME 11:29	WIDTH (feet)		
OBSERVER Kaitly, DP Taz, Hoha, vrha	TEMPERATURE (°C)	20.66 ^d	20.64 ^d
REACH	DISSOLVED OXYGEN (mg/L)	6.05	6.10
TRANSECT#	CONDUCTIVITY (mS/cm)	0.157	0.157
DAR_CODE	pH	7.98	7.99
STREAM Hillawee	TURBIDITY (NTU)	0.85	
TRIBUTARY	TOTAL SUSPENDED SOLIDS (mg/L)		



FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2

20.7

BANK
FULL

STREAM EDGE

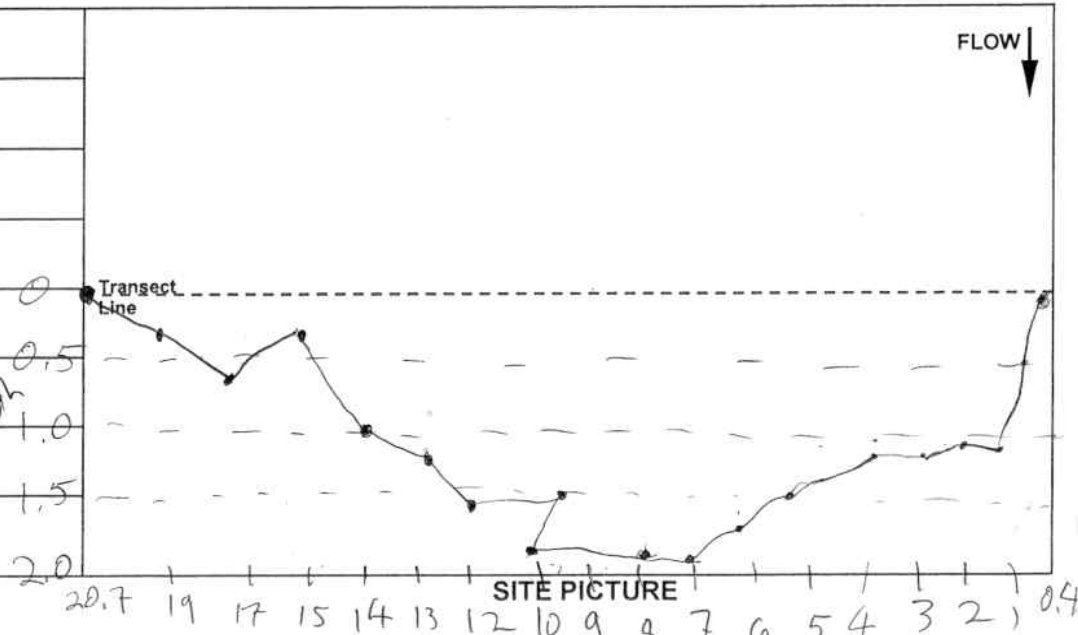
0.03

STREAM EDGE

BANK
FULL

Stream Edge Width (feet)	20.7ft	19ft	17ft	15ft	14ft	13ft	12ft	11ft	10ft	9ft	8ft	7ft	6ft	5ft	4ft	3ft	2ft	1ft
Stream Edge Depth (feet)	0	0.4	0.6	0.4	1ft	1.2ft	1.6ft	1.8ft	1.7ft	1.5ft	1.8ft	1.6ft	1.7ft	1.5ft	1.3ft	1.3	1.2ft	1.2ft
Flow Rate Width (ft/sec)																		
Flow Rate Depth (ft/sec)																		
Substrate/ % Vegetation																		
% Plant Coverage																		
Mean Velocity ¹ (ft/sec)	0	-0.05	-0.01	-0.07	-0.02	0.03	0.04	0.14	0.18	0.35	0.50	0.60	0.11	0.41	0.28	0.23	-0.01	-0.04
Surface Velocity ² (ft/sec)	0	-0.04	-0.01	-0.02	0.02	-0.01	0.06	0.01	0.17	0.30	0.48	0.59	0.54	0.50	0.42	0.31	0.05	-0.06
Bottom Velocity ³ (ft/sec)	0	-0.13	0.00	0.05	-0.04	-0.06	-0.05	-0.04	0.19	0.19	0.23	0.20	0.17	0.21	0.23	0.64	-0.08	-0.10

DATE 2-15-2005		HYDROLAB	
TIME 1:30 p.m.	WIDTH (feet)	Pool	Riffle
OBSERVER Hillel, J.R., I'ini, Hiiwai A. Iokapa	TEMPERATURE (°C)	20.96°	20.97°
REACH	DISSOLVED OXYGEN (mg/L)	6.06	6.17
TRANSECT#	CONDUCTIVITY (mS/cm)	0.156	0.156
DAR_CODE	pH	8.06	8.07
STREAM Hillawe	TURBIDITY (NTU)	0.64	3.1
TRIBUTARY	TOTAL SUSPENDED SOLIDS (mg/L)	18.27	35.77



FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2

BANK
FULL

STREAM EDGE

BANK
FULL

STREAM EDGE

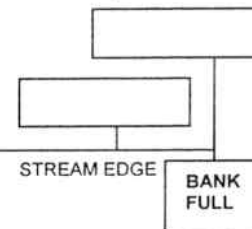
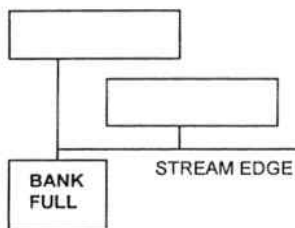
Stream Edge Width (feet)																				
Stream Edge Depth (feet)																				
Flow Rate Width (ft/sec)																				
Flow Rate Depth (ft/sec)																				
Substrate/ % Vegetation																				
% Plant Coverage																				
Mean Velocity ¹ (ft/sec)																				
Surface Velocity ² (ft/sec)																				
Bottom Velocity ³ (ft/sec)																				

DATE	16 Feb 2005			HYDROLAB	Stream/Ocean			FLOW ↓ Transect Line
TIME	1440			WIDTH (feet)				
OBSERVER	KS/Kanu			TEMPERATURE (°C)	21.36	23.44		
REACH				DISSOLVED OXYGEN (mg/L)	5.67	4.32		
TRANSECT#				CONDUCTIVITY (mS/cm)	0.209	44.6		
DAR_CODE				pH	7.14	7.79		
STREAM	Waipio at Muliwai			TURBIDITY (NTU)	5.3	7.0		
TRIBUTARY				TOTAL SUSPENDED SOLIDS (mg/L)				

Kamehameha Schools

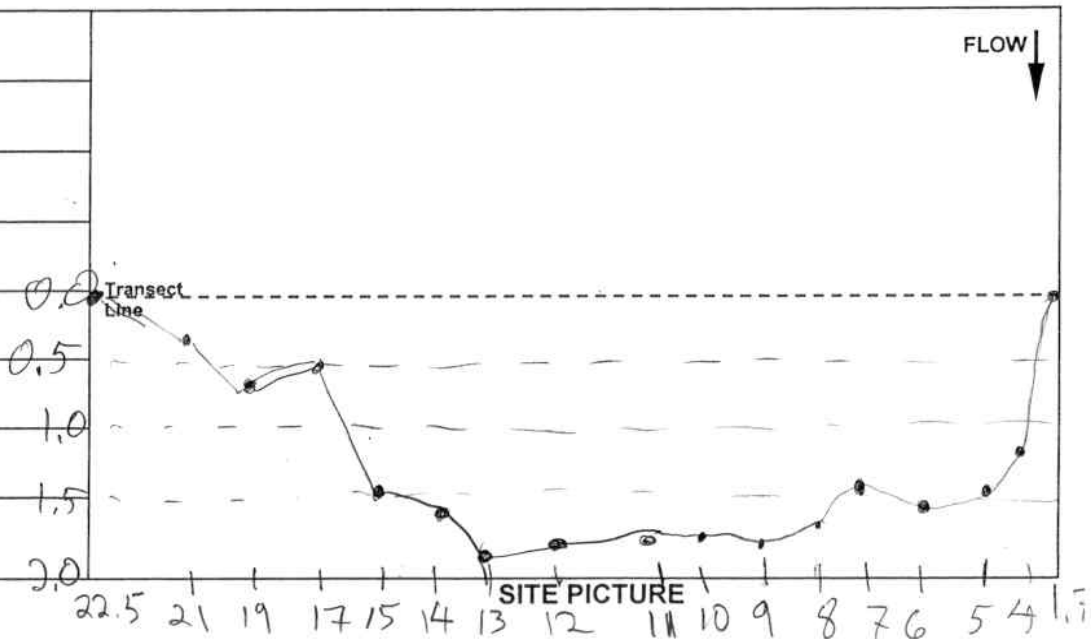
FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2



Stream Edge Width (feet)	22.5	21	19	17	15	14	13	12	11	10	9	8	7	6	5	4	1.7	
Stream Edge Depth (feet)	0ft	0.3	0.7	0.5	1.5	1.6	1.9	1.8	1.8	1.8	1.9	1.7	1.6	1.6	1.5	1.3	0	
Flow Rate Width (ft/sec)																		
Flow Rate Depth (ft/sec)																		
Substrate/ % Vegetation																		
% Plant Coverage																		
Mean Velocity ¹ (ft/sec)		-0.04	-0.03	-0.05	-0.04	-0.04	0.02	0.17	0.15	0.18	0.42	0.62	0.53	0.36	0.18	-0.02		
Surface Velocity ² (ft/sec)		-0.02	-0.05	-0.09	0.04	0.16	0.12	0.21	0.26	0.32	0.38	0.66	0.67	0.58	0.28	0.21		
Bottom Velocity ³ (ft/sec)		-0.04	-0.04	-0.08	-0.06	-0.05	0.03	0.04	0.16	0.37	0.33	0.27	0.36	0.17	0.08	0.05		

DATE 2-17-05	HYDROLAB			
TIME 9:01 a.m.	WIDTH (feet)	Pool	Riffle	
OBSERVER Kaori, Ahi, Nalu, Opae (Potagi) Iwa	TEMPERATURE (°C)	20.37	20.42	
REACH	DISSOLVED OXYGEN (mg/L)	5.93	6.30	
TRANSECT#	CONDUCTIVITY (mS/cm)	0.158	0.158	
DAR_CODE	pH	7.84	7.89	
STREAM Hivilawe	TURBIDITY (NTU)	5.3	4.3	
TRIBUTARY	TOTAL SUSPENDED SOLIDS (mg/L)			



BANK
FULL

Kamehameha
School

FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2

BANK
FULL

Stream Edge Width (feet)	22.3	20	18	16	14	13	12	11	10	9	8	7	6	5	4	3	1.7	
Stream Edge Depth (feet)	0.4	0.5	0.5	0.7	1.4	1.7	1.7	1.9	1.8	1.8	1.7	1.6	1.6	1.5	1.3	1.3	0	
Flow Rate Width (ft/sec)																		
Flow Rate Depth (ft/sec)																		
Substrate/ % Vegetation																		
% Plant Coverage																		
Mean Velocity ¹ (ft/sec)		-0.01	-0.02	-0.02	-0.02	0.09	0.13	0.21	0.21	0.33	0.37	0.44	0.53	0.38	0.08	-0.02		
Surface Velocity ² (ft/sec)		-0.01	0	-0.06	-0.03	0.01	0.22	0.36	0.38	0.28	0.81	0.46	0.71	0.19	0.20	0.08		
Bottom Velocity ³ (ft/sec)		-0.05	-0.03	-0.05	-0.13	0.01	-0.05	0.20	0.30	0.04	0.15	0.90	0.07	0.05	0.08	-0.29		

DATE	Feb 17. 05			
TIME	9:23 a.m.			
OBSERVER	Hihimae Kelsey Keli Kavela			
REACH	Hihimae			
TRANSECT#	20.64			
DAR_CODE	20.65			
STREAM	Hihimae			
TRIBUTARY				

HYDROLAB

WIDTH (feet)

Pool Riffle

TEMPERATURE (°C)

20.64 20.65

DISSOLVED OXYGEN (mg/L)

6.31 6.32

CONDUCTIVITY (mS/cm)

0.158 0.151

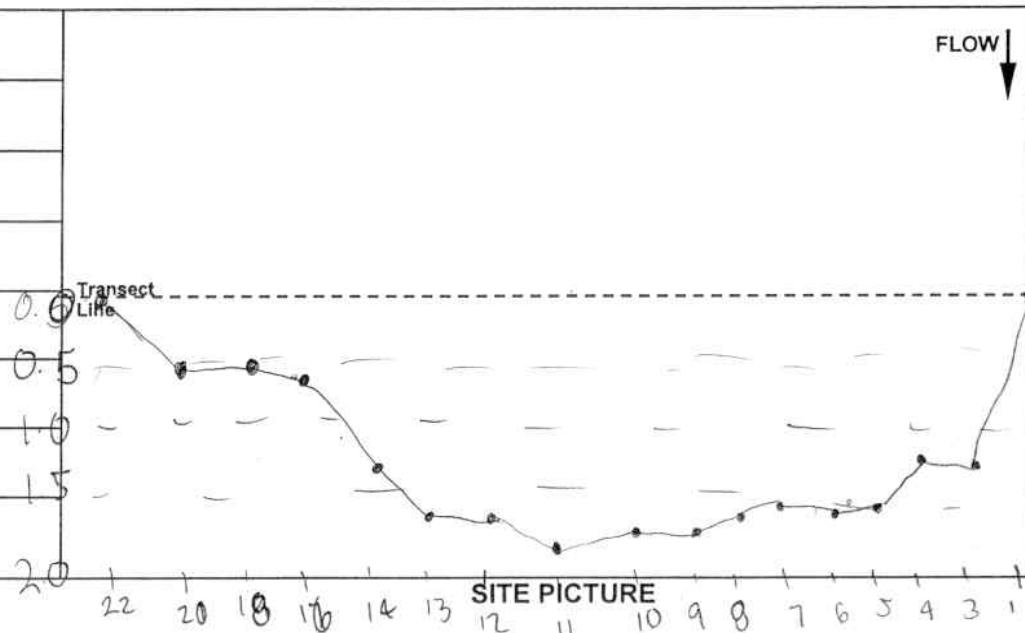
pH

7.94 7.96

TURBIDITY (NTU)

3.4 3.4

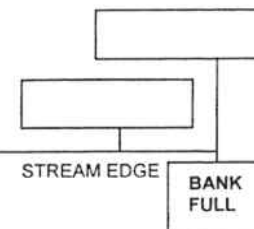
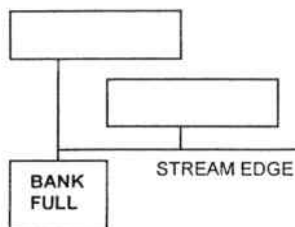
TOTAL SUSPENDED SOLIDS (mg/L)



Kamehameha
Schools

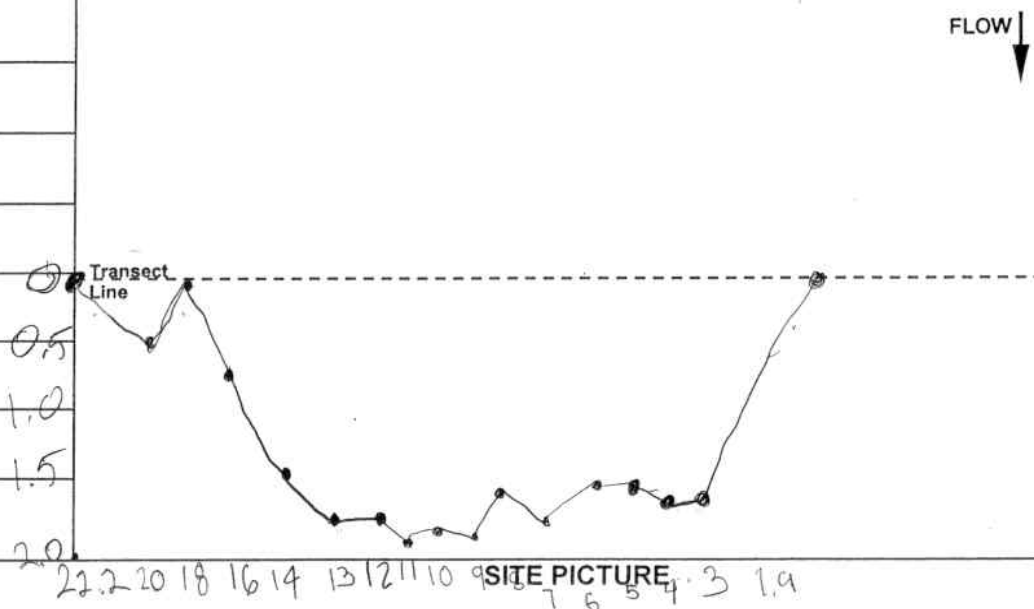
FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
Surface Velocity² = 6/10ths Depth x 2
Bottom Velocity³ = 6/10ths Depth / 2



Stream Edge Width (feet)	22.2	20	18	16	14	13	12	11	10	9	8	7	6	5	4	3	1.9	
Stream Edge Depth (feet)	0	0.5	0.05	0.7	1.5	1.7	1.7	1.9	1.8	1.6	1.6	1.7	1.5	1.5	1.4	1.3	0	
Flow Rate Width (ft/sec)																		
Flow Rate Depth (ft/sec)																		
Substrate/ % Vegetation																		
% Plant Coverage																		
Mean Velocity ¹ (ft/sec)		-0.02	-0.05	-0.06	-0.03	0.13	0.09	0.2	0.26	1.54	0.5	0.55	0.37	0.30	0.26	-0.02		
Surface Velocity ² (ft/sec)		-0.02	-0.05	-0.04	0.08	0.03	0.28	0.27	0.47	0.68	0.66	0.59	0.66	0.34	0.13	0.07		
Bottom Velocity ³ (ft/sec)		-0.05	-0.07	-0.05	-0.09	0.08	0.11	-0.01	0.4	0.15	0.08	0.28	0.08	0.07	-0.02	-0.38		

DATE 2/17/05	water quality	HYDROLAB	
		pool	riffle
TIME 10:43	WIDTH (feet)		
OBSERVER Oropu, Jacob, Justin, Kamea, Chloe K.	TEMPERATURE (°C)	20.97°	26.99°
REACH	DISSOLVED OXYGEN (mg/L)	6.60	6.33
TRANSECT#	CONDUCTIVITY (mS/cm)	0.157	0.157
DAR_CODE	pH	8.11	8.11
STREAM Hillawe	TURBIDITY (NTU)	3.0	3.3
TRIBUTARY	TOTAL SUSPENDED SOLIDS (mg/L)		



FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2

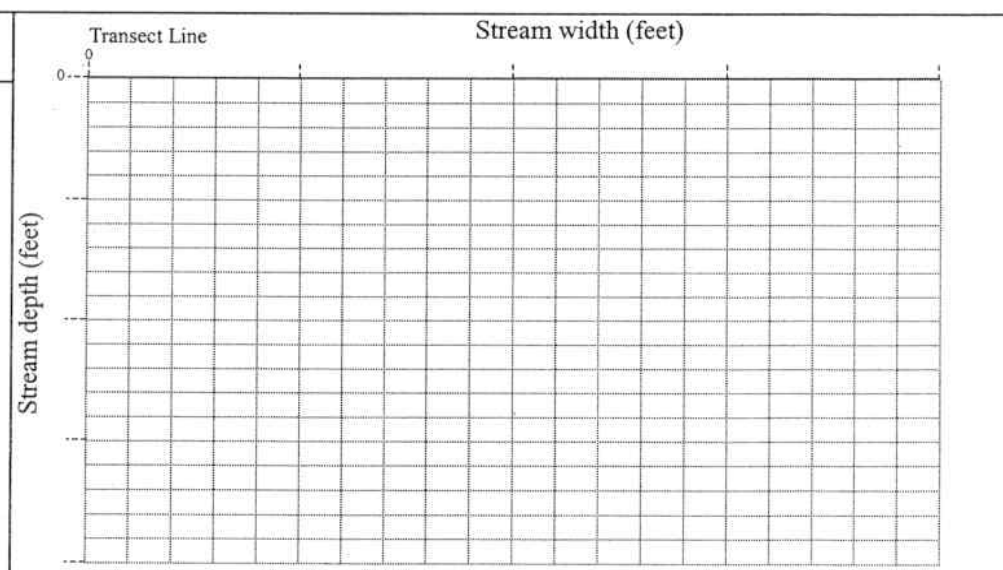
STREAM EDGE

STREAM EDGE

BANK FULL

Stream Edge Width (feet)																			
Stream Edge Depth (feet)																			
Flow Rate Width (ft/sec)																			
Flow Rate Depth (ft/sec)																			
Substrate/ % Vegetation																			
% Plant Coverage																			
Mean Velocity ¹ (ft/sec)																			
Surface Velocity ² (ft/sec)																			
Bottom Velocity ³ (ft/sec)																			

DATE 4-13-05	HYDROLAB		
TIME 11:30 a.m.	WIDTH (feet)	stream	ocean
OBSERVER Kamehameha Students	TEMPERATURE (°C)	22.68	25.24
REACH	DISSOLVED OXYGEN (mg/L)	5.14	3.95
TRANSECT#	CONDUCTIVITY (mS/cm)	0.170	53.9
DAR_CODE	pH	6.92	7.26
STREAM	TURBIDITY (NTU)	9.7	3.8
TRIBUTARY	TOTAL SUSPENDED SOLIDS (mg/L)		



KAMEHAMIHA
SCHOOLS

★ flow = m/s ★

FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
Surface Velocity² = 6/10ths Depth x 2
Bottom Velocity³ = 6/10ths Depth / 2

Velocities = m/s

BANK FULL

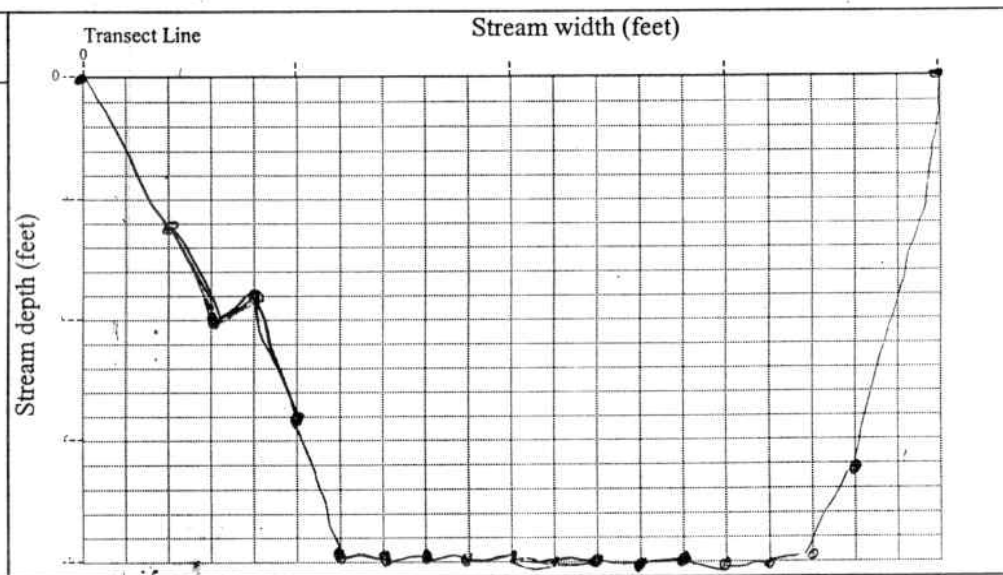
STREAM EDGE

STREAM EDGE

BANK FULL

Stream Edge Width (feet)	23.7	21	19	17	15	13	12	11	10	9	8	7	6	5	3	1.2		
Stream Edge Depth (feet)	0	0.6	1.0	0.9	1.4	2.0	2.1	2.1	2.2	2.3	2.1	2.1	2.0	2.0	1.6			
Flow Rate Width (ft/sec)		0.02																
Flow Rate Depth (ft/sec)																		
Substrate/ % Vegetation																		
% Plant Coverage																		
Mean Velocity ¹ (ft/sec)		-0.02	-0.01	-0.01	0.05	0.12	0.17	0.23	0.22	0.23	0.32	0.30	0.21	0.11	0.00			
Surface Velocity ² (ft/sec)		-0.02	-0.01	-0.03	0.09	0.13	0.15	0.24	0.27	0.35	0.30	0.31	0.21	0.11	0.03			
Bottom Velocity ³ (ft/sec)		-0.03	-0.04	-0.02	-0.05	0.02	0.08	0.11	-0.06	0.01	0.14	0.12	0.11	-0.01	-0.03			

DATE 4.14.05	HYDROLAB		
TIME 9.10 AM	WIDTH (feet)		
OBSERVER L.M./N.C./J.F./L.N.	TEMPERATURE (°C)	20.01	
REACH	DISSOLVED OXYGEN (mg/L)	7.66	
TRANSECT#	CONDUCTIVITY (mS/cm)	0.00	
DAR_CODE	pH	7.53	
STREAM Hailu e	TURBIDITY (NTU)	4.9	
TRIBUTARY	TOTAL SUSPENDED SOLIDS (mg/L)		



* Meters per second

FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
Surface Velocity² = 6/10ths Depth x 2
Bottom Velocity³ = 6/10ths Depth / 2

BANK FULL

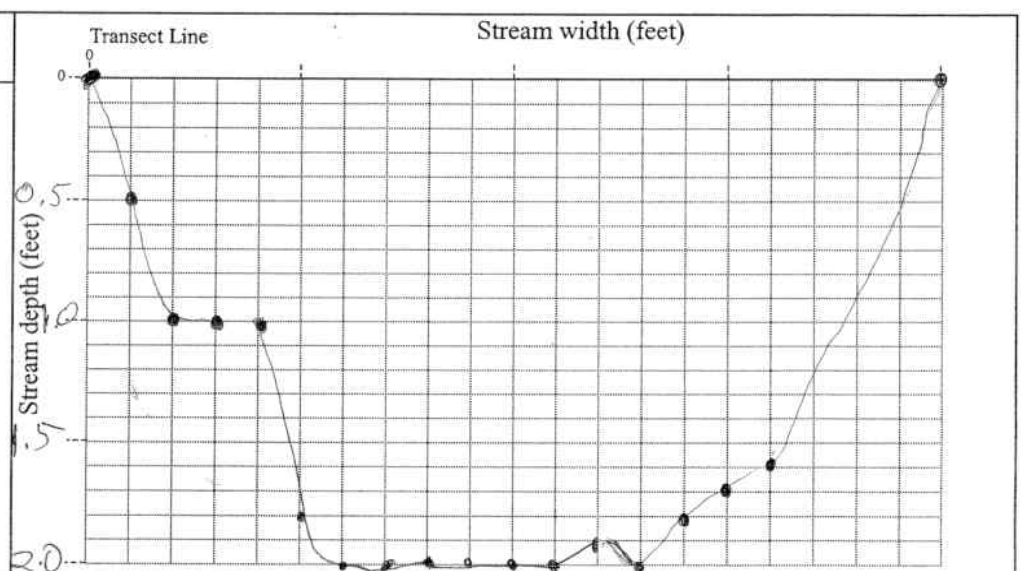
STREAM EDGE

STREAM EDGE

BANK FULL

Stream Edge Width (feet)	23.8	21	19	18	16	14	12	11	10	9	8	7	6	5	4	3	2	1.2
Stream Edge Depth (feet)		0.5	1.0	1.0	1.0	1.8	2.2	2.2	2.2	2.3	2.1	2.1	1.9	2.0	1.8	1.7	1.6	
Flow Rate Width (ft/sec)																		
Flow Rate Depth (ft/sec)																		
Substrate/ % Vegetation																		
% Plant Coverage																		
Mean Velocity ¹ (ft/sec) (m/s)		-0.01	0.01	0.01	0.01	0.06	0.14	0.16	0.19	0.26	0.37	0.34	0.34	0.15	0.08	-0.03	-0.02	
Surface Velocity ² (ft/sec)		-0.02	-0.02	-0.01	0.04	0.07	0.13	0.24	0.28	0.29	0.35	0.37	0.19	0.11	-0.01	0.07	-0.02	
Bottom Velocity ³ (ft/sec)		-0.02	-0.01	-0.02	-0.03	-0.01	0.03	0.22	-0.02	0.04	0.24	0.19	0.21	-0.02	-0.03	-0.04	-0.04	

DATE	4-14-05	HYDROLAB	
TIME	10:08 a.m.	WIDTH (feet)	Pool Riffle
OBSERVER	Potlgi 10 in 9 on	TEMPERATURE (°C)	21.24 (°C) 21.29 (°C)
REACH		DISSOLVED OXYGEN (mg/L)	7.05 7.31
TRANSECT#		CONDUCTIVITY (mS/cm)	0.107 0.102
DAR_CODE		pH	7.78 7.71
STREAM	Hillane	TURBIDITY (NTU)	3.4 3.6
TRIBUTARY		TOTAL SUSPENDED SOLIDS (mg/L)	



FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2

Thanks ya!

form
Brooke
Kady

BANK
FULL

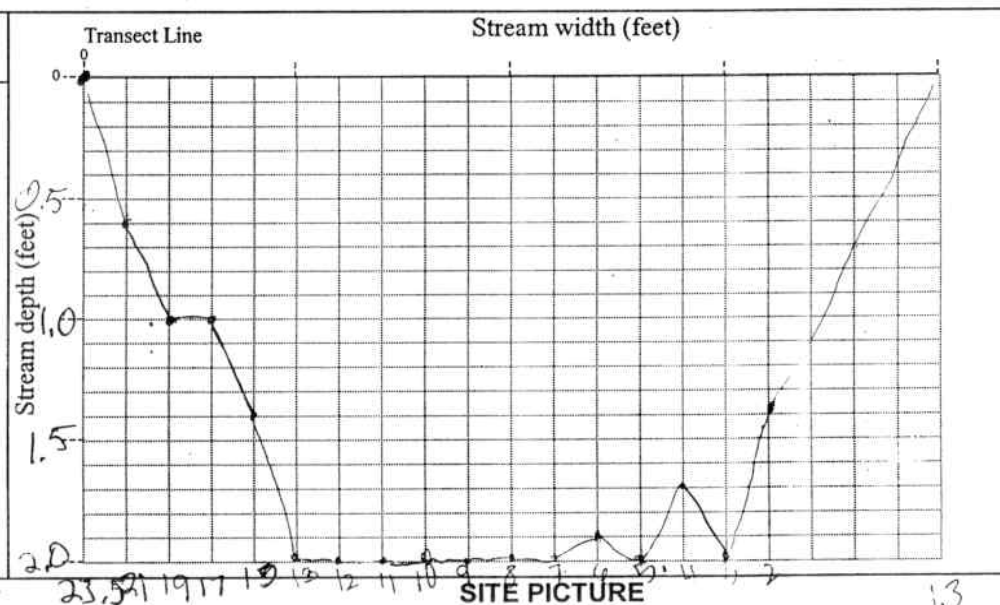
STREAM EDGE

BANK
FULL

STREAM EDGE

Stream Edge Width (feet)	23.5	21	19	17	15	13	12	11	10	9	8	7	6	5	4	3	2	1.3
Stream Edge Depth (feet)		0.6	1.0	1.0	1.4	2.0	2.2	2.3	2.2	2.2	2.1	2.2	1.9	2	1.7	2.6	1.6	
Flow Rate Width (ft/sec)																		
Flow Rate Depth (ft/sec)																		
Substrate/ % Vegetation																		
% Plant Coverage																		
Mean Velocity ¹ (ft/sec)		-0.02	-0.01	-0.01	0.06	0.16	0.27	0.27	0.27	0.22	0.27	0.37	0.27	0.16	0.06	-0.03	-0.02	
Surface Velocity ² (ft/sec)		-0.01	-0.02	0.00	0.06	0.18	0.23	0.35	0.33	0.31	0.35	0.24	0.23	0.07	0.08	0.01	0.02	
Bottom Velocity ³ (ft/sec)		-0.02	0.06	-0.02	-0.03	0.11	0.11	-0.01	-0.03	-0.02	0.13	0.06	0.10	0.01	0.05	-0.02	0.02	

DATE	4/14/05	HYDROLAB	
TIME	11:16 am	WIDTH (feet)	Pool Riffle
OBSERVER	Brooke, Kady, Tami	TEMPERATURE (°C)	21.52 21.54
REACH		DISSOLVED OXYGEN (mg/L)	6.94 7.02
TRANSECT#		CONDUCTIVITY (mS/cm)	0.703 0.1081
DAR_CODE		pH	7.73 7.71
STREAM	Hilawe	TURBIDITY (NTU)	2.8 11.4
TRIBUTARY		TOTAL SUSPENDED SOLIDS (mg/L)	



gauge Level = 1.7ft

FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2

4.15.05

LaLakea

BANK
FULL

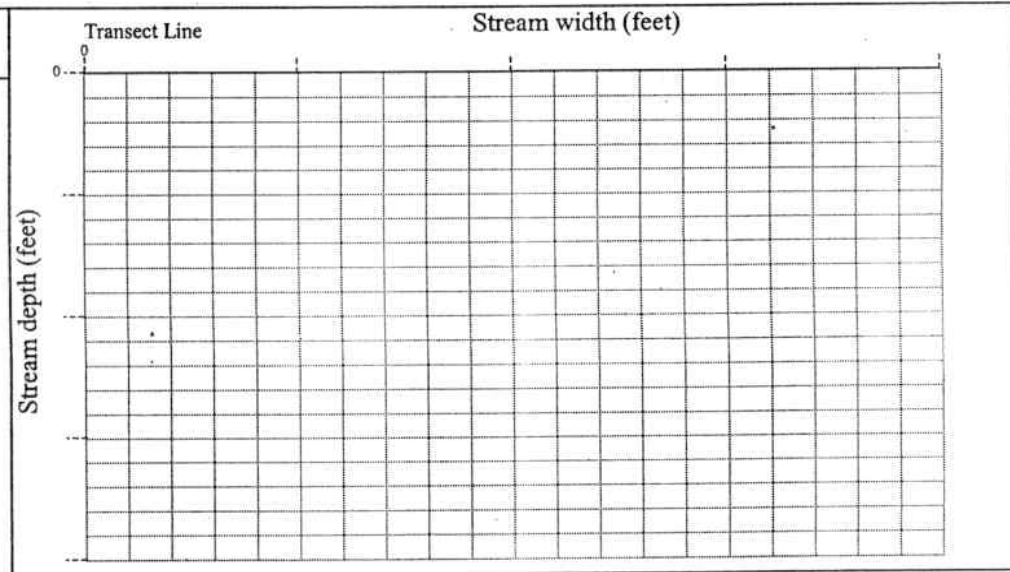
STREAM EDGE

STREAM EDGE

BANK
FULL

Stream Edge Width (feet)	7.7	8.5	9	10	11	12	13	14	15	16	17	17.1						
Stream Edge Depth (feet)		1.3	1.2	1.2	2.2	1.9	1.1	2.3	1.6	1.6	2.0							
Flow Rate Width (ft/sec)																		
Flow Rate Depth (ft/sec)																		
Substrate/ % Vegetation																		
% Plant Coverage																		
Mean Velocity ¹ (ft/sec)		0.24	0.04	0.31	0.17	1.05	0.58	0.46	0.39	0.53	0.86							
Surface Velocity ² (ft/sec)		0.89	0.81	1.41	2.05	1.53	0.76	1.62	3.31	3.28	2.14							
Bottom Velocity ³ (ft/sec)		0.26	0.20	0.10	0.16	0.78	0.60	0.54	0.86	0.73	0.48							

DATE	4.15.2005	HYDROLAB	
TIME	11:25 a.m	WIDTH (feet)	rifle Pool
OBSERVER	KANU Hiwahi	TEMPERATURE (°C)	18.74 19.25
REACH		DISSOLVED OXYGEN (mg/L)	7.27 6.07 "5.1"
TRANSECT#		CONDUCTIVITY (mS/cm)	0.052 0.056
DAR_CODE		pH	6.55 6.96
STREAM		TURBIDITY (NTU)	7.2 5.8
TRIBUTARY		TOTAL SUSPENDED SOLIDS (mg/L)	



0.5

BANK FULL

STREAM EDGE

FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2

17.4

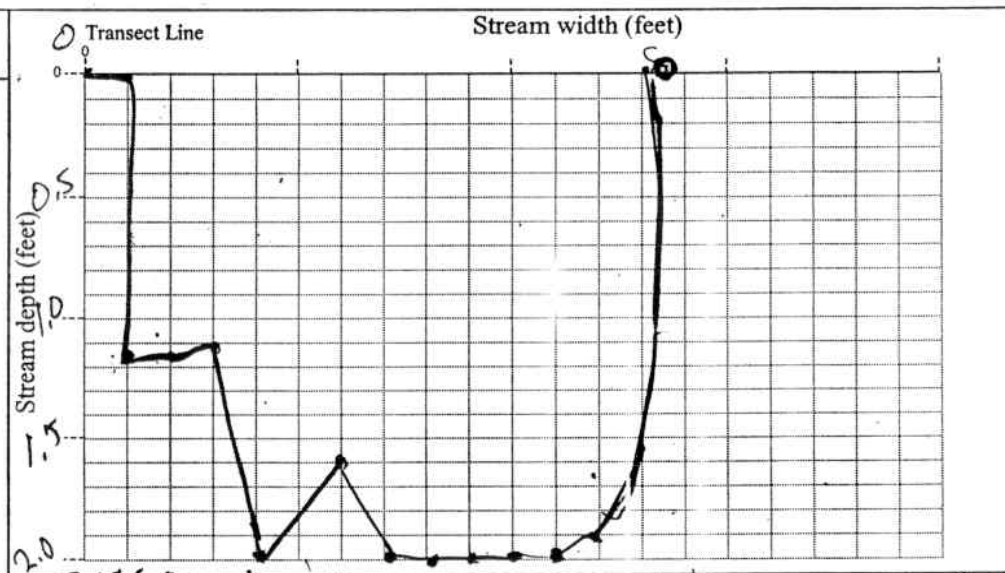
1.6

STREAM EDGE

BANK FULL

Stream Edge Width (feet)	7.6	8.5	9.0	10.1	11.1	12.1	13.1	14.1	15.1	16.1	17.1	18.1	19.1	20.1	21.1	22.1	23.1	24.1
Stream Edge Depth (feet)		1.2	1.2	1.1	2.16	1.6	2.0	2.4	2.0	1.7	1.9							
Flow Rate Width (ft/sec)																		
Flow Rate Depth (ft/sec)																		
Substrate/ % Vegetation																		
% Plant Coverage																		
Mean Velocity ¹ (ft/sec)		0.22	0.06	0.20	1.13	-0.34	0.50	-0.20	1.10	0.61	-0.48							
Surface Velocity ² (ft/sec)		0.54	0.53	1.43	2.08	2.02	1.66	2.29	3.33	2.23	-0.40							
Bottom Velocity ³ (ft/sec)		0.01	0.02	0.44	-0.34	1.90	-0.74	0.13	0.63	-0.78	-0.61							

DATE	1:46 pm	HYDROLAB	
TIME	April 15, 2005	WIDTH (feet)	R. Rd. Pod
OBSERVER	J.O., K.L.H.L., Wm.L.S.	TEMPERATURE (°C)	18.81 19.38
REACH		DISSOLVED OXYGEN (mg/L)	7.38 5.59
TRANSECT#		CONDUCTIVITY (mS/cm)	0.050 0.056
DAR_CODE		pH	6.63 7.05
STREAM	Lalakea	TURBIDITY (NTU)	5.9 15.5
TRIBUTARY		TOTAL SUSPENDED SOLIDS (mg/L)	



FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2

Stream
 gage 1.65 ft

BANK FULL

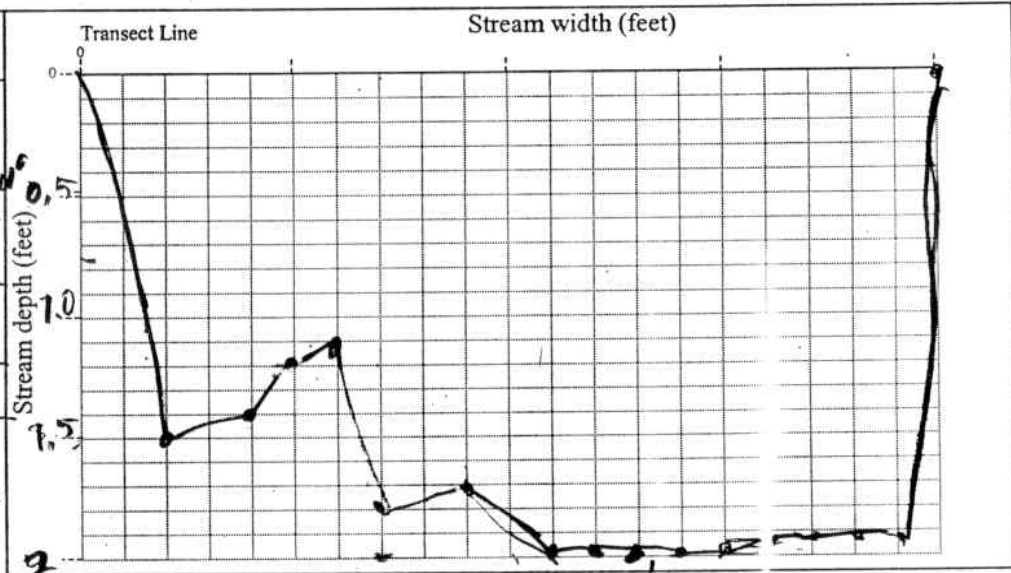
STREAM EDGE

STREAM EDGE

BANK FULL

Stream Edge Width (feet)	7.6ft	8.5ft	9ft	10ft	11ft	12ft	13ft	14ft	15ft	16ft	17ft	17.25							
Stream Edge Depth (feet)	1.5	1.4	1.2	1.8	1.7	2.0	2.3	2.4	1.5	1.9									
Flow Rate Width (ft/sec)																			
Flow Rate Depth (ft/sec)																			
Substrate/ % Vegetation																			
% Plant Coverage																			
Mean Velocity ¹ (ft/sec)	0.26	0.10	0.25	1.01	0.127	0.03	0.41	-0.19	0.29	0.26									
Surface Velocity ² (ft/sec)	0.81	0.13	0.55	1.95	1.96	1.63	1.41	3.04	0.23	2.37									
Bottom Velocity ³ (ft/sec)	0.12	0.49	-0.02	0.16	-0.37	-6.2	0.48	0.19	0.78	0.76									

DATE 4/15/05	HYDROLAB		
TIME 2:09	WIDTH (feet)	Riffle, Pool, Pool	
OBSERVER Hini wai L.S., K.G., K.P., K.K.	TEMPERATURE (°C)	16.43°C	19.46°C
REACH	DISSOLVED OXYGEN (mg/L)	7.22	6.15
TRANSECT#	CONDUCTIVITY (mS/cm)	0.050	0.058
DAR_CODE	pH	6.59	7.02
STREAM Lalakea	TURBIDITY (NTU)	5.6	16.4
TRIBUTARY	TOTAL SUSPENDED SOLIDS (mg/L)		



Mean Velocity¹ = 6/10ths Depth
Surface Velocity² = 6/10ths Depth x 2
Bottom Velocity³ = 6/10ths Depth / 2

Mean Velocity¹ = 6/10ths Depth
Surface Velocity² = 6/10ths Depth x 2
Bottom Velocity³ = 6/10ths Depth / 2

Bottom Velocity³ = 6/10ths Depth / 2

Bottom Velocity³ = 6/10ths Depth / 2

Bottom Velocity³ = 6/10ths Depth / 2

STREAM EDGE

STREAM EDGE

**BANK
FULL**

[illegible]

DATE	HYDROLAB				FLOW ↓
TIME	WIDTH (feet)	stream mouth	Ocean water		
OBSERVER	TEMPERATURE (°C)	22.00	24.62		
REACH	DISSOLVED OXYGEN (mg/L)	7.03	4.55		
TRANSECT#	CONDUCTIVITY (mS/cm)	0.167	53.9		
DAR_CODE	pH	7.40	7.62		
STREAM	TURBIDITY (NTU)	12.7	3.8		
TRIBUTARY	TOTAL SUSPENDED SOLIDS (mg/L)				

Stream gage 1.91 ft
above

Stream gage = 1.65 ft
below diversion

FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
Surface Velocity² = 6/10ths Depth x 2
Bottom Velocity³ = 6/10ths Depth / 2

6A

23D

BANK
FULL

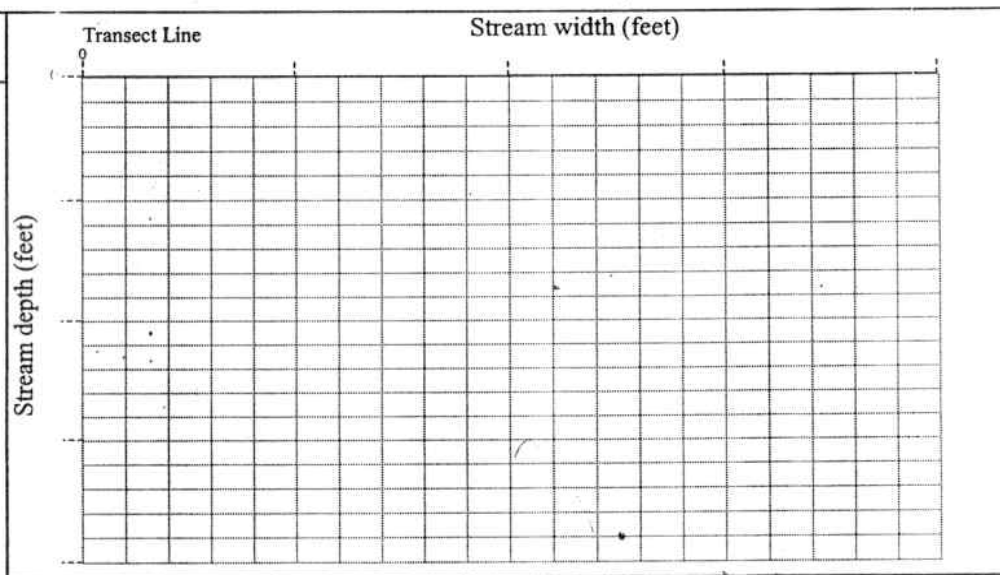
STREAM EDGE

STREAM EDGE

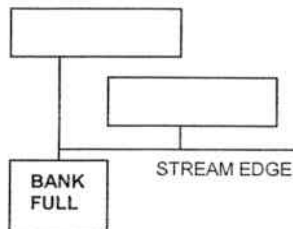
BANK
FULL

Stream Edge Width (feet)	7.0	9.0	11.0	13.0	15.0	16.5	22.2												
Stream Edge Depth (feet)	1.7	0.9	1.0	1.7	1.1	1.0	0.05												
Flow Rate Width (ft/sec)																			
Flow Rate Depth (ft/sec)																			
Substrate/ % Vegetation																			
% Plant Coverage																			
Mean Velocity ¹ (ft/sec)	0.75	2.21	1.11	0.93	(-0.07)	0.51	✓												
Surface Velocity ² (ft/sec)	1.40	2.22	2.05	2.22	2.61	1.96	✓												
Bottom Velocity ³ (ft/sec)	0.58	1.83	0.21	(-0.04)	(-0.08)	0.01	✓												

DATE 4/17/05	HYDROLAB		
TIME 10:35 am	WIDTH (feet)		
OBSERVER K. A. & M. K. KIM	TEMPERATURE (°C)		
REACH Lalakea below diversion	DISSOLVED OXYGEN (mg/L)		
TRANSECT#	CONDUCTIVITY (mS/cm)		
DAR_CODE	pH		
STREAM Lalakea	TURBIDITY (NTU)		
TRIBUTARY	TOTAL SUSPENDED SOLIDS (mg/L)		

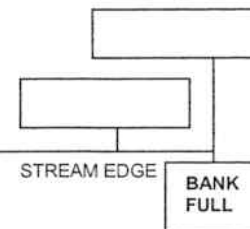


Ho'omana pono KANU



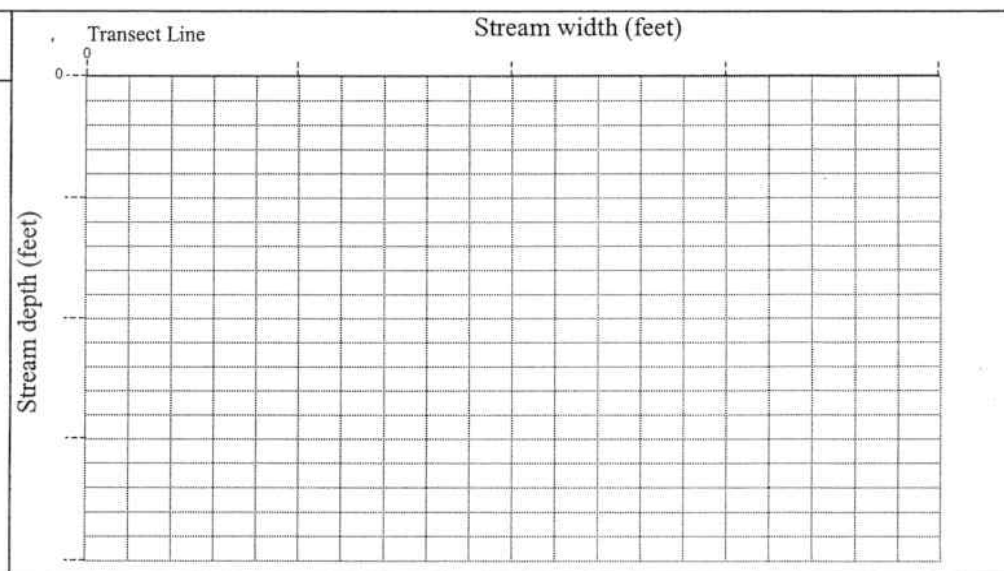
FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2



Stream Edge Width (feet)																			
Stream Edge Depth (feet)																			
Flow Rate Width (ft/sec)																			
Flow Rate Depth (ft/sec)																			
Substrate/ % Vegetation																			
% Plant Coverage																			
Mean Velocity ¹ (ft/sec)																			
Surface Velocity ² (ft/sec)																			
Bottom Velocity ³ (ft/sec)																			

DATE 6/15/05	HYDROLAB		
TIME 10:00	WIDTH (feet)	Muli wai	Kaha Kai
OBSERVER Hi'ilipi	TEMPERATURE (°C)	22.56	26.05
REACH	DISSOLVED OXYGEN (mg/L)	5.40	3.57
TRANSECT#	CONDUCTIVITY (mS/cm)	0.183	54.2
DAR_CODE	pH	6.68	7.59
STREAM	TURBIDITY (NTU)	5.1	4.3
TRIBUTARY	TOTAL SUSPENDED SOLIDS (mg/L)		



FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2

BANK FULL

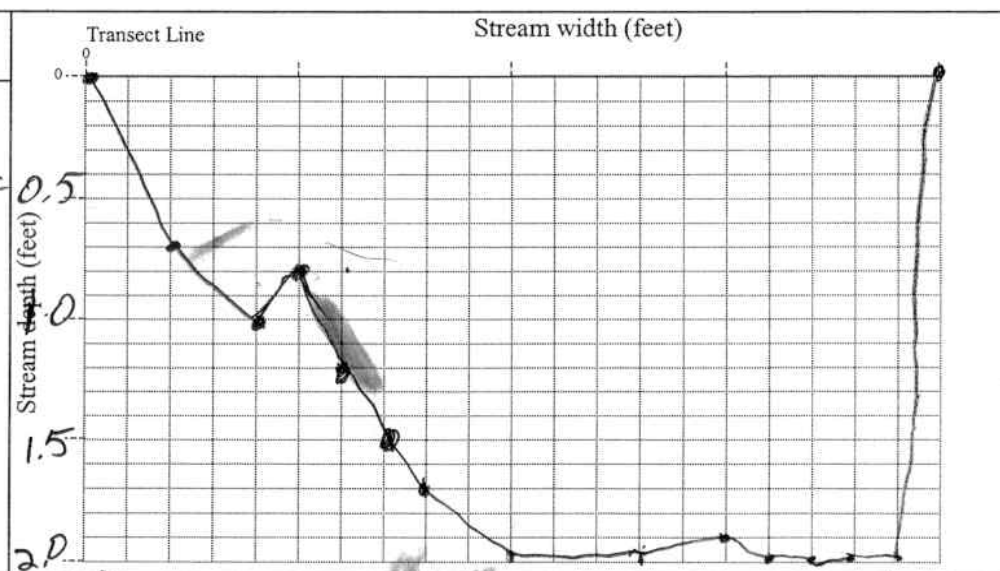
STREAM EDGE

STREAM EDGE

BANK FULL

Stream Edge Width (feet)	23.9	21	19	17	16	15	14	13	11	10	8	7	5	4	2.0			
Stream Edge Depth (feet)	0	0.7	1.0	0.7	1.1	1.5	1.7	2.0	2.0	2.1	1.9	1.9	1.6	1.5				
Flow Rate Width (ft/sec)	0																	
Flow Rate Depth (ft/sec)	0																	
Substrate/ % Vegetation																		
% Plant Coverage																		
Mean Velocity ¹ (ft/sec)	0	-0.06	-0.05	0.14	0.15	0.07	0.16	0.32	0.54	0.45	0.11	0.65	0.30	0.01				
Surface Velocity ² (ft/sec)	0	-0.02	-0.06	0.15	0.18	0.26	0.26	0.54	0.71	0.77	0.90	0.48	0.28	0.06				
Bottom Velocity ³ (ft/sec)	0	-0.04	-0.08	-0.04	0.02	0.04	0.04	0.26	-0.09	-0.14	0.38	0.09	0.08	0.04				

DATE June 16, 2005		HYDROLAB	
TIME 10:36 a.m.	WIDTH (feet)	Run Riffle	
OBSERVER opae	TEMPERATURE (°C)	21.54°C 21.62°C	
REACH	DISSOLVED OXYGEN (mg/L)	6.82 6.73	
TRANSECT#	CONDUCTIVITY (mS/cm)	0.121 0.121	
DAR_CODE	pH	7.68 7.61	
STREAM Higlawe	TURBIDITY (NTU)	3.6 97.3	
TRIBUTARY	TOTAL SUSPENDED SOLIDS (mg/L)		



FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2

23.6

1.7

BANK
FULL

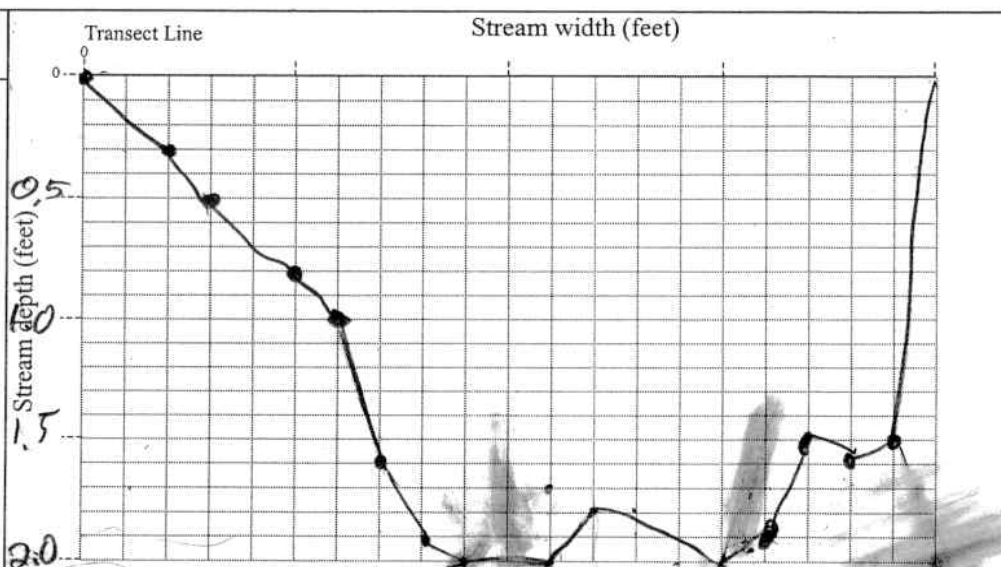
STREAM EDGE

STREAM EDGE

BANK
FULL

Stream Edge Width (feet)	23.6	22.4	20.4	18.4	16.4	14.4	12.4	10.4	9.4	8.4	7.4	6.4	5.4	4.4	3.4	1.7		
Stream Edge Depth (feet)	0	0.3	0.5	0.8	1.1	1.6	1.9	2.0	2.2	1.8	1.9	1.9	1.5	1.6	1.5			
Flow Rate Width (ft/sec)																		
Flow Rate Depth (ft/sec)																		
Substrate/ % Vegetation																		
% Plant Coverage																		
Mean Velocity ¹ (ft/sec)	0	-0.05	-0.04	0.02	-0.06	0.07	0.33	0.41	0.46	0.78	0.53	0.48	0.32	0.13	0.04			
Surface Velocity ² (ft/sec)	0	0.02	0.02	0.05	0.09	0.19	0.46	0.88	0.74	0.75	0.74	0.49	0.37	0.21	-0.01			
Bottom Velocity ³ (ft/sec)	0	-0.03	-0.06	-0.09	-0.04	-0.04	0.22	0.04	0.13	0.62	0.2	0.12	0.21	-0.06	-0.11			

DATE	June 16/05	HYDROLAB	
TIME	12:50	WIDTH (feet)	Run Riffle
OBSERVER	Hihawai Egnaoka'ina	TEMPERATURE (°C)	23.32 22.31
REACH		DISSOLVED OXYGEN (mg/L)	6.29 6.52
TRANSECT#		CONDUCTIVITY (mS/cm)	0.121 0.12
DAR_CODE		pH	7.77 7.7
STREAM	Hii laue	TURBIDITY (NTU)	3.9 216
TRIBUTARY		TOTAL SUSPENDED SOLIDS (mg/L)	



FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2

BANK
FULL

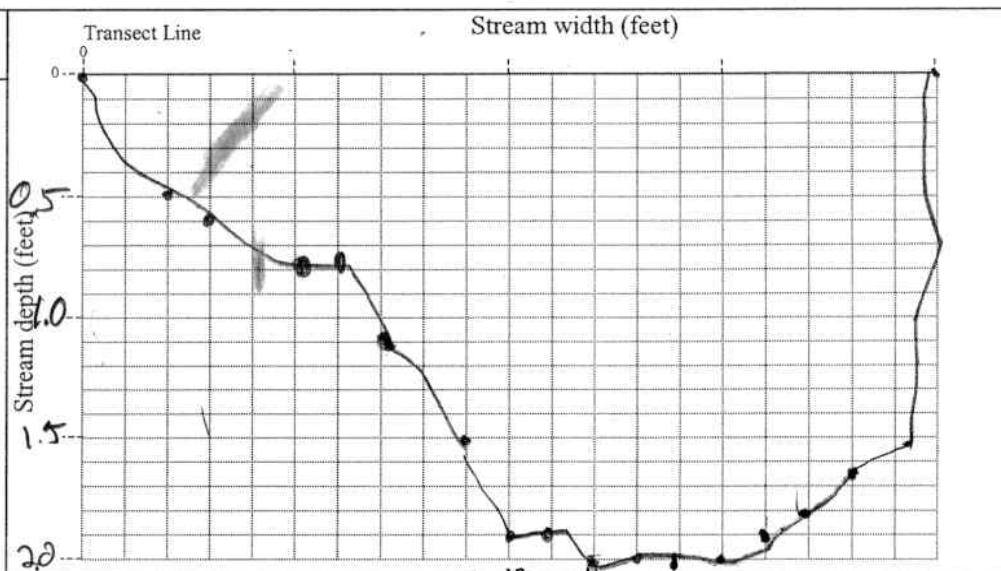
STREAM EDGE

STREAM EDGE

BANK
FULL

Stream Edge Width (feet)	23.5	21	20	19	18	17	15	14	13	12	11	10	9	8	7	6	5	3	2.7
Stream Edge Depth (feet)	0	0.5	0.6	0.8	0.8	0.8	1.3	1.5	1.9	1.9	2.1	2.1	2.2	2.1	1.9	1.8	1.65	1.55	0
Flow Rate Width (ft/sec)																			
Flow Rate Depth (ft/sec)																			
Substrate/ % Vegetation																			
% Plant Coverage																			
Mean Velocity ¹ (ft/sec)	0	-0.02	0.00	0.01	-0.05	0.03	0.03	0.08	0.15	0.44	0.14	0.43	0.49	0.80	0.71	0.60	0.56	0.01	
Surface Velocity ² (ft/sec)	0	0.00	0.03	0.05	0.05	0.15	0.12	0.24	0.25	0.22	0.56	0.50	0.97	0.60	0.82	0.69	0.53	-0.16	
Bottom Velocity ³ (ft/sec)	0	-0.02	-0.01	-0.08	-0.08	0.06	0.05	-0.06	0.14	0.39	0.08	0.14	0.13	0.97	0.26	0.18	0.29	-0.09	

DATE 6/16/05	HYDROLAB		
TIME	WIDTH (feet)	run	
OBSERVER O'opu	TEMPERATURE (°C)	20.74	20.79
REACH	DISSOLVED OXYGEN (mg/L)	6.68	6.82
TRANSECT#	CONDUCTIVITY (mS/cm)	0.121	0.12
DAR_CODE	pH	7.38	7.41
STREAM Hiilawe	TURBIDITY (NTU)	3.9	9.2
TRIBUTARY	TOTAL SUSPENDED SOLIDS (mg/L)		



Ka'iulani, Lanakila, Honi, Moana, Moani, Miliiani, Kama
Waipi'o - Hi'ilawe Stream

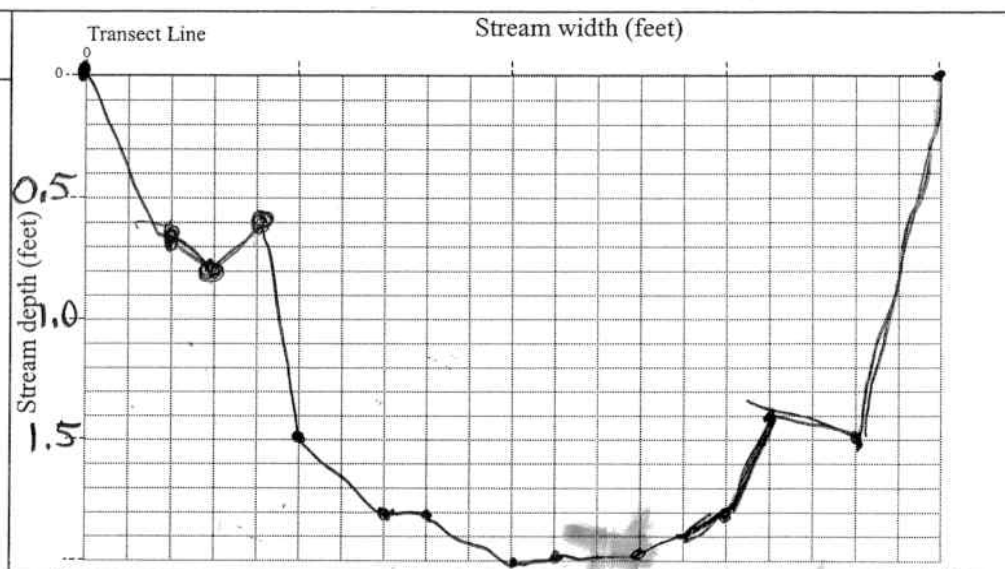
FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
Surface Velocity² = 6/10ths Depth x 2
Bottom Velocity³ = 6/10ths Depth / 2

BANK FULL															STREAM EDGE															BANK FULL														

Stream Edge Width (feet)	23.5	21.0	19.0	17.0	15.0	13.0	11.0	10.0	9.0	8.0	7.0	6.0	5.0	4.0	1.5			
Stream Edge Depth (feet)	0	0.7	0.9	0.7	1.5	1.8	1.8	2.0	2.1	2.0	1.9	1.8	1.4	1.5	0			
Flow Rate Width (ft/sec)	—																	
Flow Rate Depth (ft/sec)	—																	
Substrate/ % Vegetation	+																	
% Plant Coverage	—																	
Mean Velocity ¹ (ft/sec)	—	-0.02	0.01	0.10	0.11	0.13	0.56	0.61	0.65	0.85	0.81	0.61	0.18	0.10	0			
Surface Velocity ² (ft/sec)	—	-0.01	0.07	-0.01	0.12	0.33	0.46	0.73	0.63	0.74	0.60	0.44	0.09	0.11	0			
Bottom Velocity ³ (ft/sec)	—	-0.03	-0.01	-0.01	-0.02	-0.03	0.21	0.38	0.08	0.30	0.39	0.16	0.15	-0.06	0			

DATE	6/16/05	HYDROLAB	
TIME	2:05 pm to 3 pm	WIDTH (feet)	RUN RIFPLE
OBSERVER		TEMPERATURE (°C)	23.19 23.17
REACH		DISSOLVED OXYGEN (mg/L)	6.30 6.49
TRANSECT#		CONDUCTIVITY (mS/cm)	0.121 0.121
DAR_CODE		pH	7.71 7.64
STREAM	Hi'ilawe	TURBIDITY (NTU)	3.4 109
TRIBUTARY		TOTAL SUSPENDED SOLIDS (mg/L)	



Lalakea - Just below diversion
 * Heavy rains recently, too high to sample bugs
 - Downloaded stream gage Today
 * Ditch Not Flowing Now, except for one pinhole crack, only gallons lost (very little lost)

FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2

BANK FULL

STREAM EDGE

High Flow Now / Gage Height (New one, old one is gone) = 1.75 ft.

STREAM EDGE

BANK FULL

Stream Edge Width (feet)	6.8	7.3	8.0	9.0	10	11	12	13	14	15	16	16.5						
Stream Edge Depth (feet)	0	1.6	1.5	1.3	1.7	1.9	2.2	2.5	1.9	1.6	2.0	0						
Flow Rate Width (ft/sec)																		
Flow Rate Depth (ft/sec)																		
Substrate/ % Vegetation																		
% Plant Coverage																		
Mean Velocity ¹ (ft/sec)		0.38	0.55	0.84	1.46	1.27	0.51	-0.42	0.52	0.77	0.90							
Surface Velocity ² (ft/sec)		1.14	1.36	1.95	2.32	1.73	2.76	2.68	3.27	2.57	2.41							
Bottom Velocity ³ (ft/sec)		0.01	0.31	0.84	0.83	-0.54	-0.58	-0.47	0.18	-0.43	-0.73							

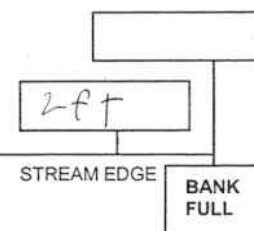
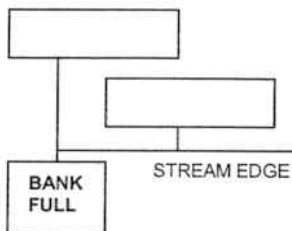
DATE 22 June 2005	HYDROLAB			
TIME 1321 hrs.	WIDTH (feet)			
OBSERVER RE/D P/Dan	TEMPERATURE (°C)			
REACH	DISSOLVED OXYGEN (mg/L)			
TRANSECT#	CONDUCTIVITY (mS/cm)			
DAR_CODE	pH			
STREAM Lalakea, below Divers	TURBIDITY (NTU)			
TRIBUTARY	TOTAL SUSPENDED SOLIDS (mg/L)			

FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2

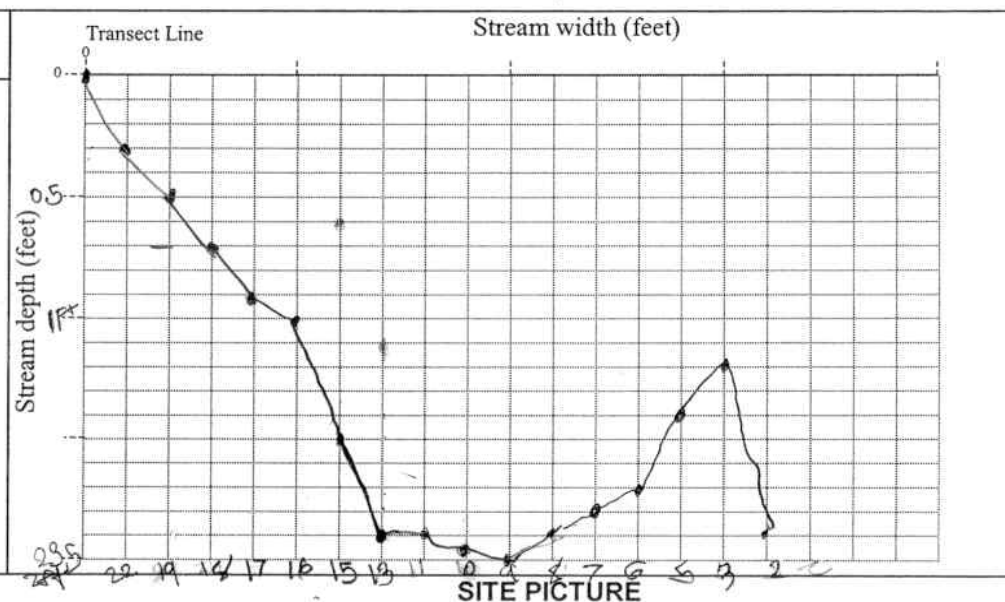
ALOT OF DEBRIS UNDER
 THE WATER

KANU 'O KA AINA



Stream Edge Width (feet)	23.5 ^{ft}	22 ^{ft}	19 ^{ft}	18 ^{ft}	17 ^{ft}	16 ^{ft}	15 ^{ft}	13 ^{ft}	11 ^{ft}	10 ^{ft}	9 ^{ft}	8 ^{ft}	7 ^{ft}	6 ^{ft}	5 ^{ft}	3 ^{ft}	2 ^{ft}	1 ^{ft}
Stream Edge Depth (feet)	0	0.5 ^{ft}	0.5 ^{ft}	0.0 ^{ft}	0.9 ^{ft}	1.0 ^{ft}	1.5 ^{ft}	1.9 ^{ft}	1.9 ^{ft}	2.0 ^{ft}	2.1 ^{ft}	1.9 ^{ft}	1.8 ^{ft}	1.7 ^{ft}	1.4 ^{ft}	1.2 ^{ft}	0	
Flow Rate Width (ft/sec)																		
Flow Rate Depth (ft/sec)																		
Substrate/ % Vegetation																		
% Plant Coverage																		
Mean Velocity ¹ (ft/sec)		0.00	-0.01	-0.01	0.02	0.02	-0.01	0.7	0.10	0.02	0.17	0.17	0.20	0.10	0.06	-0.02		
Surface Velocity ² (ft/sec)		-0.01	-0.02	0.01	0.04	0.05	0.04	0.05	0.17	0.18	0.18	0.26	0.25	0.19	0.02	0.03		
Bottom Velocity ³ (ft/sec)		-0.01	-0.02	-0.01	0.02	0.04	-0.01	0.03	0.02	0.03	-0.02	0.05	0.06	0.02	0.04	0.02		

DATE	9-30-05	HYDROLAB RUN R. R. R.	
TIME	9:06 AM	WIDTH (feet)	
OBSERVER	J. A. B., L.S., JAMAICANS J.D.	TEMPERATURE (°C)	21.63°C 21.66°C
REACH	ABOVE STABLES	DISSOLVED OXYGEN (mg/L)	5.99 6.15
TRANSECT#		CONDUCTIVITY (mS/cm)	0.136 0.135
DAR_CODE		pH	7.77 7.80
STREAM	H2' IL AWE	TURBIDITY (NTU)	3.3 4.5
TRIBUTARY		TOTAL SUSPENDED SOLIDS (mg/L)	DUODLE



Kanu 'o ka āina

Kaily
Iliana
Honu
Polani

FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
Surface Velocity² = 6/10ths Depth x 2
Bottom Velocity³ = 6/10ths Depth / 2

debris near
left Bank

22.9

1.3 ft.

BANK FULL

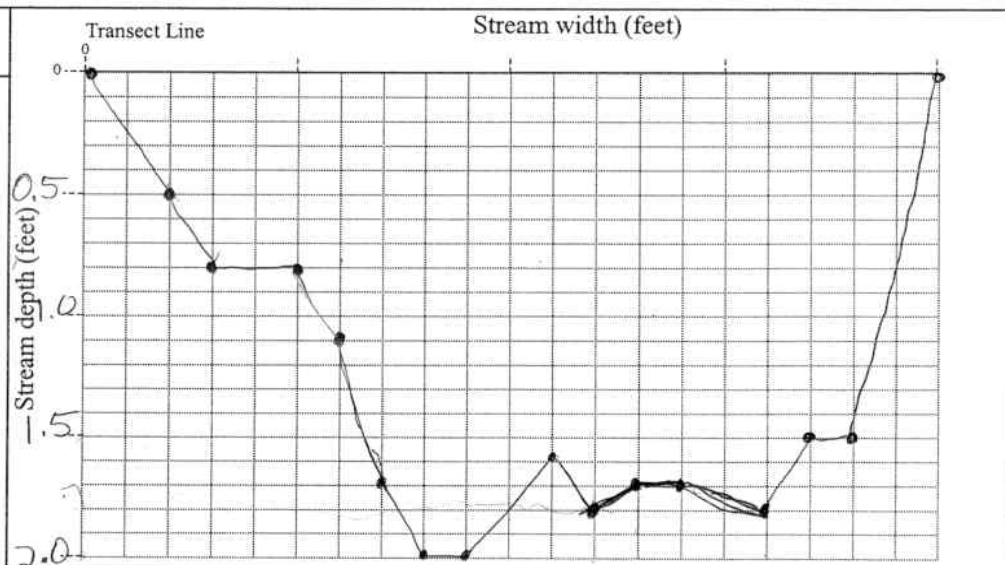
STREAM EDGE

STREAM EDGE

BANK FULL

Stream Edge Width (feet)	22.9	21	19	17	15	13	12	11	10	9	8	7	6	5	4	3	1.3	
Stream Edge Depth (feet)	0	0.4	0.7	0.7	1.2	1.8	2.2	2.1	1.6	2.0	1.8	1.75	1.75	1.8	1.52	1.5	0.3	
Flow Rate Width (ft/sec)																		
Flow Rate Depth (ft/sec)																		
Substrate/ % Vegetation																		
% Plant Coverage																		
Mean Velocity ¹ (ft/sec)		0.00	-0.02	-0.02	0.00	-0.38	0.05	0.14	0.15	0.01	0.12	0.23	0.21	-0.04	0.00	0.01		
Surface Velocity ² (ft/sec)		-0.01	0.00	0.01	0.02	0.03	0.03	0.08	0.14	0.17	0.17	1.15	0.18	0.09	0.10	0.04		
Bottom Velocity ³ (ft/sec)		-0.02	-0.03	-0.03	-0.02	-0.04	0.01	0.04	0.06	0.05	0.12	0.07	0.05	-0.03	0.07	-0.02		

DATE	Aug. 30, 2005	HYDROLAB	
TIME	10:15	Kun Riffle	
OBSERVERS	Kaily Honu, Polani, Iliana	TEMPERATURE (°C)	22.07° 22.12°
REACH	above stables	DISSOLVED OXYGEN (mg/L)	6.13 6.19
TRANSECT#		CONDUCTIVITY (mS/cm)	0.136 0.135
DAR_CODE		pH	8.02 8.04
STREAM	Hiiilawe	TURBIDITY (NTU)	3.1 33.5
TRIBUTARY		TOTAL SUSPENDED SOLIDS (mg/L)	



KANU

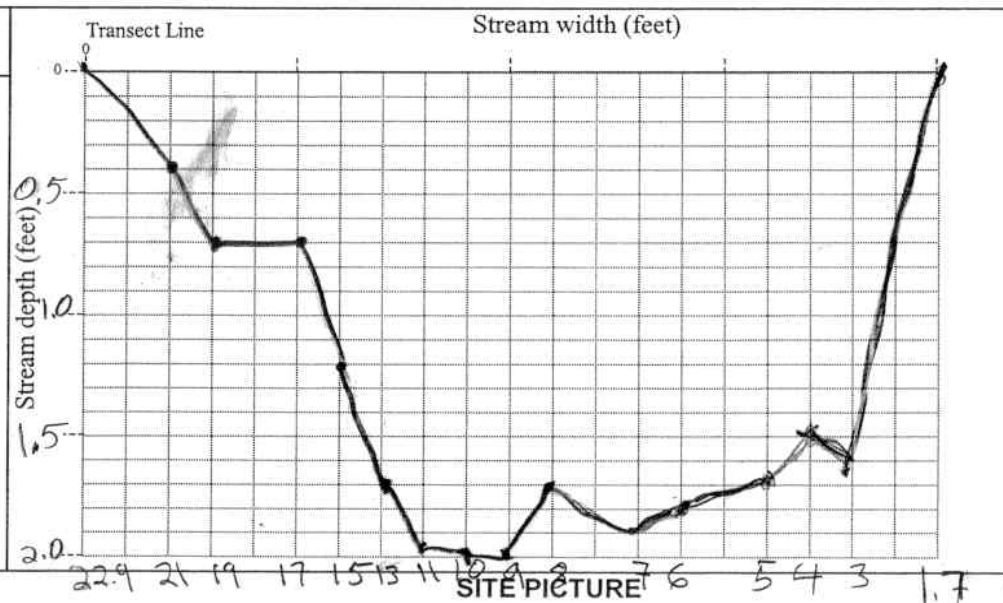
FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2

	22.9															1.7	
BANK FULL	STREAM EDGE																BANK FULL

Stream Edge Width (feet)	22.9	21	19	17	15	13	11	10	9	8	7	6	5	4	3	1.7		
Stream Edge Depth (feet)	0	0.4	0.7	0.7	1.2	1.7	2.1	2.1	2.1	1.7	1.9	1.8	1.7	1.4	1.5	0		
Flow Rate Width (ft/sec)																		
Flow Rate Depth (ft/sec)																		
Substrate/ % Vegetation																		
% Plant Coverage																		
Mean Velocity ¹ (ft/sec)		-0.02	-0.01	0.01	0	0.04	0.13	0.13	0.11	0.24	0.21	0.16	0.12	0.06	0	0		
Surface Velocity ² (ft/sec)		-0.02	-0.02	0.01	0.05	0.04	0.12	0.14	0.25	0.27	0.18	0.23	0.15	0.08	0.06	0		
Bottom Velocity ³ (ft/sec)		-0.03	-0.04	-0.03	-0.02	0.03	0.04	-0.03	-0.05	0.11	0.06	0.04	0.03	0.02	0.01	0		

DATE 8/30/2005	HYDROLAB ran riffle	
TIME 12:31 P.M.	WIDTH (feet)	
OBSERVER J. Hillier, K. Hillier	TEMPERATURE (°C)	22.56 22.52
REACH above Statues	DISSOLVED OXYGEN (mg/L)	5.93 6.14
TRANSECT#	CONDUCTIVITY (mS/cm)	0.135 0.136
DAR_CODE	pH	8.18 8.12
STREAM Hill Lane	TURBIDITY (NTU)	2.7 200
TRIBUTARY	TOTAL SUSPENDED SOLIDS (mg/L)	



FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2

stream gage = 1,28 ft.

76.7 ft

14.6

BANK
FULL

STREAM EDGE

STREAM EDGE

BANK
FULL

Stream Edge Width (feet)	7.0 ft	8.0	9.0	10.0	11.0	12.0	13.0	14.0										
Stream Edge Depth (feet)	1.3	2.1	1.9	0.8	0.7	0.7	1.0	0.4										
Flow Rate Width (ft/sec)																		
Flow Rate Depth (ft/sec)																		
Substrate/ % Vegetation																		
% Plant Coverage																		
Mean Velocity ¹ (ft/sec)	0.04	0.20	0.30	0.16	0.49	0.38	0.52	0.74										
Surface Velocity ² (ft/sec)	0.14	0.31	0.16	0.40	0.26	0.30	0.64	0.50										
Bottom Velocity ³ (ft/sec)	(0.01)	0.03	(0.21)	(0.12)	0.21	0.29	0.11	0.62										

DATE Sept 01, 2005	HYDROLAB			
TIME 10:27 am	WIDTH (feet)			
OBSERVER DSP + MKKM	TEMPERATURE (°C)	21.02		
REACH Lalakea below diversion	DISSOLVED OXYGEN (mg/L)	5.89		
TRANSECT#	CONDUCTIVITY (mS/cm)	0.66		
DAR_CODE	pH	7.07		
STREAM Lalakea	TURBIDITY (NTU)	4.9		
TRIBUTARY	TOTAL SUSPENDED SOLIDS (mg/L)			

FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2

7.1

below diversion

BANK
FULL

STREAM EDGE

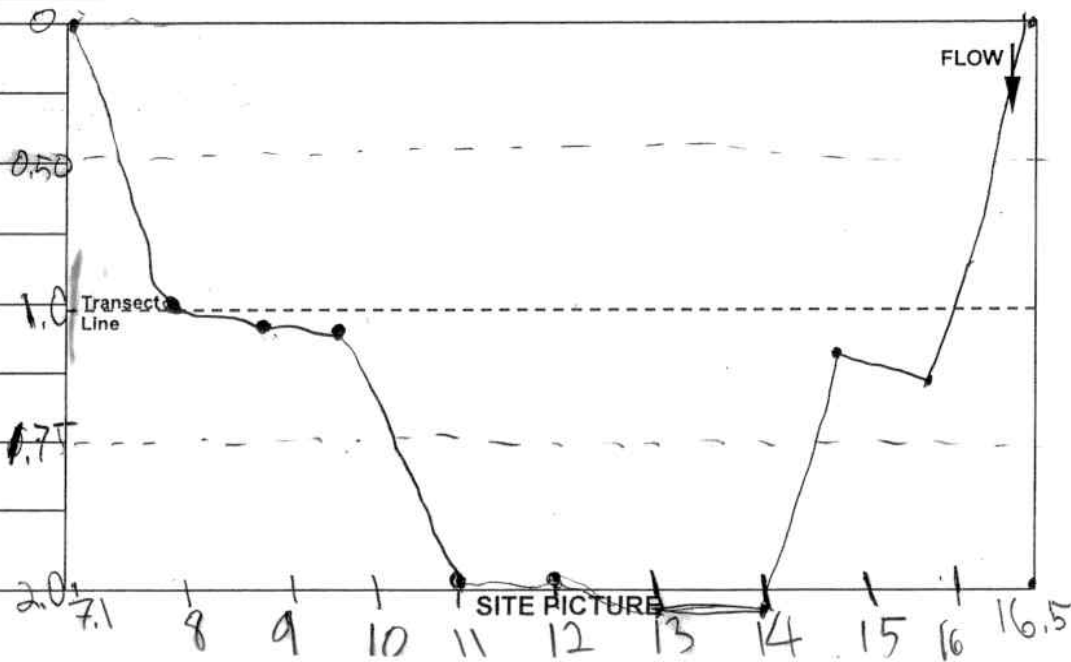
STREAM EDGE

BANK
FULL

16.5

Stream Edge Width (feet)	7.1	8.	9	10	11ft	12ft	13ft	14ft	15ft	16ft	16.5							
Stream Edge Depth (feet)	0	1.0	1.1	1.3	2.0	2.0	2.2	2.2	1.3	1.4	0							
Flow Rate Width (ft/sec)																		
Flow Rate Depth (ft/sec)																		
Substrate/ % Vegetation																		
% Plant Coverage																		
Mean Velocity ¹ (ft/sec)		0.24	0.12	0.07	0.03	0.33	0.58	0.48	0.37	0.36								
Surface Velocity ² (ft/sec)		0.20	0.50	1.12	1.22	0.79	0.53	2.01	1.73	0.48								
Bottom Velocity ³ (ft/sec)		0.15	0.07	0.07	0.47	0.10	0.59	0.30	0.67	0.54								

DATE	10/17/2005	HYDROLAB	
TIME	12:05	RIFLE Plunge 2001	
OBSERVER	H.L., K.P., J.A.	TEMPERATURE (°C)	20.01° 20.01°
REACH		DISSOLVED OXYGEN (mg/L)	6.16 6.30
TRANSECT#		CONDUCTIVITY (mS/cm)	0.041 0.040
DAR_CODE		pH	7.10 7.01
STREAM	L. A. 119 leg	TURBIDITY (NTU)	3.3
TRIBUTARY		TOTAL SUSPENDED SOLIDS (mg/L)	



FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2

Stream gage
 1.48

STREAM EDGE

BANK FULL

BANK FULL

STREAM EDGE

Stream Edge Width (feet)	7.7	9.4	10.4	11.4	12.4	13.4	14.4	15.4	16.4										
Stream Edge Depth (feet)	0.6	1.12	1.75	1.4	1.7	2.1	2.1	1.7	1.4										
Flow Rate Width (ft/sec)																			
Flow Rate Depth (ft/sec)																			
Substrate/ % Vegetation																			
% Plant Coverage																			
Mean Velocity ¹ (ft/sec)	0.31	0.08	0.32	0.21	0.04	0.16	0.48	0.91	0.06										
Surface Velocity ² (ft/sec)	0.33	0.46	1.26	1.48	0.73	0.60	1.66	1.64	0.13										
Bottom Velocity ³ (ft/sec)	0.37	0.11	0.56	1.13	0.23	0.24	0.24	0.60	0.73										

DATE	10-17-05	HYDROLAB			
TIME	1:48	WIDTH (feet)	1.1		
OBSERVER	NO pilis / Kaily-Iliha - Palahi - Wany	TEMPERATURE (°C)	20.30		
REACH		DISSOLVED OXYGEN (mg/L)	6.08		
TRANSECT#	2	CONDUCTIVITY (mS/cm)	0.041		
DAR_CODE		pH	7.05		
STREAM	Lalakea	TURBIDITY (NTU)	3.15		
TRIBUTARY		TOTAL SUSPENDED SOLIDS (mg/L)			

FLOW DATA SHEET

Mean Velocity¹ = 6/10ths Depth
 Surface Velocity² = 6/10ths Depth x 2
 Bottom Velocity³ = 6/10ths Depth / 2

Stream gage = 1.441 Ft

7.6 ft

BANK FULL
 STREAM EDGE

STREAM EDGE
 BANK FULL

Stream Edge Width (feet)	8ft	9ft	10ft	11ft	12ft	13ft	14ft	15ft	16ft										
Stream Edge Depth (feet)	1.4	1.1	1.02	1.6	1.6	2.2	2.1	1.4	1.5										
Flow Rate Width (ft/sec)																			
Flow Rate Depth (ft/sec)																			
Substrate/ % Vegetation																			
% Plant Coverage																			
Mean Velocity ¹ (ft/sec)	0.13	0.08	0.01	-0.16	-0.09	-0.41	-0.08	0.18	0.31										
Surface Velocity ² (ft/sec)	0.43	0.52	1.18	1.44	0.63	0.07	1.60	1.03	1.11										
Bottom Velocity ³ (ft/sec)	-0.07	0.07	0.21	-0.10	0.10	-0.07	-0.15	-0.12	-0.22										

DATE	10/17/2005	HYDROLAB			
TIME	2:35 pm	WIDTH (feet)			
OBSERVER	Leah D. Jamaican Kaniela	TEMPERATURE (°C)	20.33°		
REACH		DISSOLVED OXYGEN (mg/L)	6.12		
TRANSECT#		CONDUCTIVITY (mS/cm)	0.041		
DAR_CODE		pH	7.04		
STREAM	Lalakea	TURBIDITY (NTU)	31.5		
TRIBUTARY		TOTAL SUSPENDED SOLIDS (mg/L)			

Mean Velocity¹ = 6/10ths Depth
Surface Velocity² = 6/10ths Depth x 2
Bottom Velocity³ = 6/10ths Depth / 2
0.0597 Lakega = 2.85

Mean Velocity¹ = 6/10ths Depth
Surface Velocity² = 6/10ths Depth x 2
Bottom Velocity³ = 6/10ths Depth / 2

Bottom Velocity³ = 6/10ths Depth / 2

005 97 Lakakea-

STREAM EDGE

STREAM EDGE

BANK
FULL[illegible]

DATE 10/18/2005	HYDROLAB 5 River ocean		
TIME 9:41 am.	WIDTH (feet)		
OBSERVER Kanu 'oka'a'ima	TEMPERATURE (°C)	21.50°C	24.99°C
REACH	DISSOLVED OXYGEN (mg/L)	4.96	4.79
TRANSECT#	CONDUCTIVITY (mS/cm)	0.207	43.9
DAR_CODE	pH	7.15	7.90
STREAM By ocean	TURBIDITY (NTU)	5.5	4.11
TRIBUTARY	TOTAL SUSPENDED SOLIDS (mg/L)		

