

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

Handwritten: ~~Highway~~ Above Road Xing at Ayrault
4 Jan 2004

Handwritten: (Jan 2004)

BANK FULL	STREAM EDGE	STREAM EDGE	BANK FULL
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Stream Edge Width (feet)	3.5	4	5	7	9	11	13	15	17	19	21	23	23.3						
Stream Edge Depth (feet)	1.5	1.7	1.7	2.1	1.9	1.6	2.1	1.9	1.7	1.4	0.9	0.2							
Flow Rate Width (ft/sec)																			
Flow Rate Depth (ft/sec)																			
Substrate/ % Vegetation																			
% Plant Coverage																			
Mean Velocity ¹ (ft/sec)	0.1	0.21	0.45	0.88	0.95	1.20	0.82	0.44	0.38	0.32	0.20	0.08							
Surface Velocity ² (ft/sec)	0.01	0.05	0.47	0.85	1.05	1.02	1.05	0.92	0.71	0.46	0.38	0.12							
Bottom Velocity ³ (ft/sec)	0.05	0.22	0.42	0.37	0.45	0.67	0.23	0.18	0.07	0.12	0.07	0.05							

DATE	4 Jan 2004	HYDROLAB										FLOW									
TIME	1547	WIDTH (feet)																			
OBSERVER	RE/A.S./M.M.	TEMPERATURE (°C)	21.1																		
REACH	Above Hillawe Rd Xing	DISSOLVED OXYGEN (mg/L)	6.6 average																		
TRANSECT#		CONDUCTIVITY (mS/cm)	77.5																		
DAR_CODE		pH	7.36																		
STREAM	Hillawe	TURBIDITY (NTU)																			
TRIBUTARY		TOTAL SUSPENDED SOLIDS (mg/L)																			

Handwritten: Hillawe just above Ayrault's water turbid, brown color
Transect Line 1.65 ft, staff gage height

FLOW DATA SHEET

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

50

31.0

BANK
FULL

STREAM EDGE

STREAM EDGE

BANK
FULL

Stream Edge Width (feet)	5.0	8	10	12	14	16	18	20	22	24	26	28	30	31					
Stream Edge Depth (feet)	0.04	0.1	0.5	0.6	0.7	1.0	1.2	1.4	1.4	1.7	0.9	0.9	0.6	0					
Flow Rate Width (ft/sec)	0																		
Flow Rate Depth (ft/sec)																			
Substrate/ % Vegetation																			
% Plant Coverage																			
Mean Velocity ¹ (ft/sec)		0.28	0.32	0.24	0.44	0.48	0.48	0.56	0.83	0.57	0.78	0.33	0.16						
Surface Velocity ² (ft/sec)		0	0.34	0.24	0.44	0.47	0.53	0.68	0.75	0.70	0.78	0.34	0.20						
Bottom Velocity ³ (ft/sec)		0	0.28	0.08	0.17	0.32	0.04	-0.2	0.4	-0.12	0.5	0.14	-0.05						

DATE	7 Jan 2004	HYDROLAB										FLOW ↑									
TIME	1514	WIDTH (feet)																			
OBSERVER	KEIAS	TEMPERATURE (°C)										20.5									
REACH	above EKF Diver	DISSOLVED OXYGEN (mg/L)										11.0									
TRANSECT#		CONDUCTIVITY (mS/cm)										131.8									
DAR_CODE		PH										9.72									
STREAM	111 h/w	TURBIDITY (NTU)																			
TRIBUTARY		TOTAL SUSPENDED SOLIDS (mg/L)																			

Transsect Line

Staff Gauge = 0.52 ft

Highway above EKF Diver

1514 hrs

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

FLOW DATA SHEET	
Mean Velocity ¹ = 6/10ths Depth Surface Velocity ² = 6/10ths Depth x 2 Bottom Velocity ³ = 6/10ths Depth / 2	

BANK FULL STREAM EDGE STREAM EDGE BANK FULL

[illegible]

DATE		HYDROLAB			
TIME	3/14/2024	WIDTH (feet)			
OBSERVER	0921 RE/DSP	TEMPERATURE (°C)	19.4		
REACH		DISSOLVED OXYGEN (mg/L)	10.1		
TRANSECT#		CONDUCTIVITY (mS/cm)	28.4		
DAR_CODE		pH	7.3		
STREAM	Hillaw	TURBIDITY (NTU)	106.4		
TRIBUTARY		TOTAL SUSPENDED SOLIDS (mg/L)			

FLOW ↑

Staff Gauge above
Avalis At King = 4 inches
over very top (flooded)

Transect
Line

Above EKF Diver's

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)	30.5	29	27	25	23	20	17	14	11	8	5	3	1.4						
Stream Edge Depth (feet)	0	0.5	0.7	1.3	1.7	1.7	0.9	1.1	0.6	0.6	0.4	0.2	0						
Flow Rate Width (ft/sec)																			
Flow Rate Depth (ft/sec)																			
Substrate/ % Vegetation																			
% Plant Coverage																			
Mean Velocity ¹ (ft/sec)	0	-0.09	0.30	0.31	0.71	0.60	0.88	0.45	0.15	0.37	0.46	-0.04	0						
Surface Velocity ² (ft/sec)	0	-0.06	0.50	0.65	0.68	0.75	0.77	0.42	0.43	0.38	0.43	0.03	0						
Bottom Velocity ³ (ft/sec)	0	-0.12	0.08	0.48	-0.05	0.23	0.84	0.13	-0.06	0.20	0.21	-0.04	0						

DATE	13 Mar 2004	HYDROLAB			Transact Line 0.62 ft = Staff Gauge Level Palm battery died, no readout for Took Water Temp here Probe #4
TIME	1409	WIDTH (feet)			
OBSERVER	RE/DJP	TEMPERATURE (°C)	21.1		
REACH	Hillawe-	DISSOLVED OXYGEN (mg/L)	8.58		
TRANSECT#		CONDUCTIVITY (ms/cm)	111.4		
DAR_CODE		pH	8.19		
STREAM	Hillav	TURBIDITY (NTU)	0.35		
TRIBUTARY		TOTAL SUSPENDED SOLIDS (mg/L)			



Above
Araki Ad
King

FLOW DATA SHEET

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



STREAM EDGE

BANK
FULL

BANK
FULL

Stream Edge Width (feet)	24.1	22	20	18	16	14	12	10	8	6	4	3.1							
Stream Edge Depth (feet)	0.4	0.4	1.1	1.1	0.9	1.8	1.8	1.7	1.7	1.1	1.9	0							
Flow Rate Width (ft/sec)																			
Flow Rate Depth (ft/sec)																			
Substrate/ % Vegetation																			
% Plant Coverage																			
Mean Velocity ¹ (ft/sec)	0	-0.05	0.14	0.16	0.50	0.46	0.51	0.38	0.44	0.23	-0.05	0							
Surface Velocity ² (ft/sec)	0	0.04	0.43	0.55	0.48	0.53	0.57	0.57	0.57	0.11	-0.07	0							
Bottom Velocity ³ (ft/sec)	0	-0.12	-0.09	-0.03	0.42	0.07	0.20	-0.10	0.15	-0.17	-0.09	0							

DATE	13 Mar 2004	HYDROLAB										Gage Ht = 1.2 ft.										FLOW
TIME	1520	WIDTH (feet)																				
OBSERVER	AE/DSB	TEMPERATURE (°C)										21.4										
REACH		DISSOLVED OXYGEN (mg/L)										7.5										
TRANSECT#		CONDUCTIVITY (mS/cm)										112.4										
DAR_CODE		PH										8.2										
STREAM	Hilawe	TURBIDITY (NTU)										0.33										
TRIBUTARY		TOTAL SUSPENDED SOLIDS (mg/L)																				

Water Temp Probe # 5

Transsect Line

Took Temp Gage back to Araki to down beat to palm - out at 1530 hrs.

Down loaded Data Successfully at 4:45pm

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

STREAM EDGE

STREAM EDGE

BANK
FULL[illegible]

HYDROLAB

DATE 3/14/2004

TIME

2

OBSERVER $\Delta F \Delta V \Delta \Delta$

ACCT 101

REACH

TRANSECT#

DAR_CODE

STREAM

11/10/20

TRIBUTARY

FLOW ↑

Staff Gage above
Arakis Rd Xing = 4 inches
over very top (flooding!)

DIVISION OF AQUATIC RESOURCES GRH 2/02

SITE PICTURE



Lalakea, just below
diversion

FLOW DATA SHEET

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



STREAM EDGE

BANK
FULL

(Start on Left Bank side as looking upstream)

STREAM EDGE

BANK
FULL

Stream Edge Width (feet)	13ft	12.6	12.0	11	10	9	8	7	6	5	4.1	3.9 (end)						
Stream Edge Depth (feet)	-	0.9	1.3	0.9	1.4	1.5	1.8	2.0	1.3	1.1	1.6	-						
Flow Rate Width (ft/sec)	-																	
Flow Rate Depth (ft/sec)																		
Substrate/ % Vegetation																		
% Plant Coverage																		
Mean Velocity ¹ (ft/sec)	-	0.07	0.41	0.30	-0.22	0.04	0.22	0.58	-0.08	0.33	-0.31	-						
Surface Velocity ² (ft/sec)	-	0.51	0.36	0.97	1.41	1.05	0.19	0.99	1.83	0.94	1.42	-						
Bottom Velocity ³ (ft/sec)	-	0.21	0.15	0.30	0.15	-0.07	-0.45	-0.09	-0.58	-0.68	0.17	-						

DATE	23 Apr 2004	HYDROLAB										*Old Gauge Reading = 2.11 ft, New Gauge Reading = 1.4 ft.								FLOW ↑
TIME	1350	WIDTH (feet)																		
OBSERVER	RE/DJP	TEMPERATURE (°C)																		
REACH		DISSOLVED OXYGEN (mg/L)																		
TRANSECT#		CONDUCTIVITY (mS/cm)																		
DAR_CODE		pH																		
STREAM	Lalakea - Below	TURBIDITY (NTU)																		
TRIBUTARY	Div	TOTAL SUSPENDED SOLIDS (mg/L)																		

Transsect Line

Installed new staff gage at Lalakea below diversion today, old gage damaged and perhaps usable as we ll

* Repaired old gage w/ wive

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

[illegible]

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SITE PICTURE

100

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

1000000

1001

**BANK
FULL**

STREAM EDGE

BANK FULL

[illegible]

DATE		HYDROLAB			
TIME	1419	WIDTH (feet)			
OBSERVER	AE/DSP	TEMPERATURE (°C)			
REACH	Palm	DISSOLVED OXYGEN (mg/L)			
TRANSECT#		CONDUCTIVITY (mS/cm)			
DAR_CODE		pH			
STREAM		TURBIDITY (NTU)			
TRIBUTARY		TOTAL SUSPENDED SOLIDS (mg/L)			

FLOW

Staff Cage Height Inside Tunnel
1.59 ft

Transsect
Line -----

unsuccessful download of data
to Palm, Replaced battery 9V
in Tunnel, data logger, but
Palm was not downloading all data

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SITE PICTURE

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

BANK
FULL

GE

BANK
FULL

Aliso - Fair grass & Sycamore stream
unclogged at 4:19 pm

[illegible]

DATE		HYDROLAB			
3 May 2004					
TIME	WIDTH (feet)				
OBSERVER	TEMPERATURE (°C)				
REACH	DISSOLVED OXYGEN (mg/L)				
TRANSECT#	CONDUCTIVITY (mS/cm)				
DAR_CODE	pH				
STREAM	TURBIDITY (NTU)				
TRIBUTARY	TOTAL SUSPENDED SOLIDS (mg/L)				

FLOW ↑

Eage HH = 1.53 ft
 Inside Tunnel at
 4:39 PM 3 May 2004
 Set New Eage in Tunnel
 at 4:37 PM
 Took Temp Eage at 4:00 PM

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SITE PICTURE

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

Mean Velocity' = 6/10ths Depth

Surface Velocity² = 6/10ths Depth x 2

Bottom Velocity³ = 6/10ths Depth / 2

FLOW DATA SHEET	
Mean Velocity ¹	= 6/10ths Depth
Surface Velocity ²	= 6/10ths Depth x 2
Bottom Velocity ³	= 6/10ths Depth / 2
BANK FULL	BANK FULL

[illegible]

DATE		HYDROLAB			
TIME	1158	WIDTH (feet)			
OBSERVER	AE/DSB	TEMPERATURE (°C)			
REACH	Calaveras Tunnel	DISSOLVED OXYGEN (mg/L)			
TRANSECT#		CONDUCTIVITY (mS/cm)			
DAR_CODE		pH			
STREAM		TURBIDITY (NTU)			
TRIBUTARY		TOTAL SUSPENDED SOLIDS (mg/L)			

FLOW

- Raining today, high flow

Transsect Line

Reinstalled water Temp. Gage #1 inside tunnel at 1205 PM

Staff Gage in Tunnel 1.7 ft.

5+ vacuum

FLOW DATA SHEET

LOW DRAIN OIL!
Mean Velocity¹ = 6/10ths Depth

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

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

STREAM EDGE BANK FULL

[illegible]

DATE		HYDROLAB				FLOW ↓
TIME	1219	WIDTH (feet)				
OBSERVER	RFE/1054	TEMPERATURE (°C)				
REACH	Below Diversion	DISSOLVED OXYGEN (mg/L)				
TRANSECT#		CONDUCTIVITY (mS/cm)				
DAR_CODE		pH				
STREAM		TURBIDITY (NTU)				
TRIBUTARY		TOTAL SUSPENDED SOLIDS (mg/L)				

Transsect Line -----

High Water! Heavy Rain!

New Staff Gauge Reading: 1.7 ft.

Old Staff Gauge Reading: 2.4 ft.

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SITE PICTURE

Above EKF
Diversion

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)	36.9	34.7	32	30	27.6	25.1	23	20.2	17.3	15	12	9.5	5.7	4.1	2.1				
Stream Edge Depth (feet)	-	0.4	0.7	1.4	2.0	1.9	1.8	1.6	1.2	0.9	0.8	0.9	0.5	0.2	-				
Flow Rate Width (ft/sec)	-																		
Flow Rate Depth (ft/sec)																			
Substrate/ % Vegetation																			
% Plant Coverage																			
Mean Velocity ¹ (ft/sec)	-	0.10	0.17	0.29	0.28	0.64	0.57	0.42	0.36	0.48	0.16	0.35	0.14	-0.03	-				
Surface Velocity ² (ft/sec)	-	0.20	0.44	1.18	0.54	0.46	0.40	0.46	0.39	0.51	0.41	0.35	0.14	0.03	-				
Bottom Velocity ³ (ft/sec)	-	0.11	0.37	0.83	0.14	0.50	0.49	0.03	0.07	0.16	0.08	0.36	0.08	0.08	-				

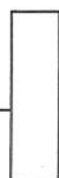
DATE	7 May 2004	HYDROLAB				Temp gauge lost to flood Staff Gauge = 0.68 ft Staff Gauge survived intact
TIME	1314 hrs.	WIDTH (feet)				
OBSERVER	KE/641	TEMPERATURE (°C)				
REACH	Above EKF	DISSOLVED OXYGEN (mg/L)				
TRANSECT#		CONDUCTIVITY (mS/cm)				
DAR_CODE		pH				
STREAM	Chilhowee	TURBIDITY (NTU)				
TRIBUTARY		TOTAL SUSPENDED SOLIDS (mg/L)				



Above Avalon Rd Km 7
Hillside

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)	24.3	22	20	18	16	14	12	10	8	6	4	2.2	1.3						
Stream Edge Depth (feet)	0.7	0.5	1.1	1.4	1.5	1.9	2.0	1.9	1.6	1.6	1.4								
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	17 May 2004	HYDROLAB										Flow ↑ old staff gage : 1.1 ft Transsect Line skippy Haul, Bayville, Glen High, etc														
TIME	1618	WIDTH (feet)																								
OBSERVER	RE/DK/GH/SH	TEMPERATURE (°C)																								
REACH		DISSOLVED OXYGEN (mg/L)																								
TRANSECT#		CONDUCTIVITY (mS/cm)																								
DAR_CODE		pH																								
STREAM	Hillside	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

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

BANK
FULL

Lalakea ditch flow measurement
19. May. 04 2:46pm
EEdAS

BANK
FULL[illegible]

DATE May 19, 2004

1:37 pm

mk-m.

DISSOLVED OXYGEN
(mg/L)

CONDUCTIVITY
(mS/cm)

Hc

TURBIDITY (NTU)

TOTAL SUSPENDED
SOLIDS (mg/L)

FLOW

- ① Just downstream of diversion
- ② Just above diversion.

Transect Line

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

LaLa Kea
Belau Division

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

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STREAM EDGE

STREAM EDGE
BANK
FILL

+ 11" to edge

[illegible]

old staff page - 2.02
new staff page - 1.28

FLOW

Transect Line

DIVISION OF AQUATIC RESOURCES GRH 2/02

SITE PICTURE

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

BANK
FULL

STREAM EDGE

Hakalaa flow crossing the road
RETAS 3:50pm 19 May, 04

STREAM EDGE

BANK
FULL[illegible]

FLOW

gag height 1.49 ft
(bent)

Transect
Line

gag height 1.49 ft
(bent)

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

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

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

BANK
FULL

Flows taken
Inside ditch.

BANK
FULL[illegible]

(1) (2)

- (1) ~~at~~ below diversion
- (2) above diversion

FLOW

10

Transect Line

St. Af. Group 1,39 ft.

DIVISION OF AQUATIC RESOURCES GRH 2/02

SITE PICTURE

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

15.7 ft

BANK
FULLBANK
FULL[illegible]

DATE		HYDROLAB			
TIME	1:53 pm	WIDTH (feet)			
OBSERVER	KE, DDP, MCLM	TEMPERATURE (°C)	20.5		
REACH		DISSOLVED OXYGEN (mg/L)	10.88		
TRANSECT#		CONDUCTIVITY (mS/cm)	50.4		
DAR_CODE		pH			
STREAM	Laakea	TURBIDITY (NTU)			
TRIBUTARY		TOTAL SUSPENDED SOLIDS (mg/L)			

old gage = 1.95 ft
new gage = 1.22 ft

Transect
Line

FLOW ↑

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

12.8 ft

STREAM EDGE

BANK
FULL

Stream Edge Width (feet)	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	12.8									
Stream Edge Depth (feet)	1.1	0.6	1.15	1.0	1.3	1.4	1.7	0.8	0.6	0.55									
Flow Rate Width (ft/sec)																			
Flow Rate Depth (ft/sec)																			
Substrate/ % Vegetation																			
% Plant Coverage																			
Mean Velocity ¹ (ft/sec)	0.00	-0.07	0.05	0.07	0.09	0.19	0.26	0.04	0.00	-0.14									
Surface Velocity ² (ft/sec)	-0.01	-0.04	0.03	-0.01	0.20	0.32	0.34	0.22	0.13	-0.09									
Bottom Velocity ³ (ft/sec)	-0.03	-0.06	0.03	-0.12	-0.04	0.17	0.00	0.03	-0.08	-0.10									

DATE		HYDROLAB				FLOW
TIME	WIDTH (feet)					
OBSERVER	TEMPERATURE (°C)					
REACH	DISSOLVED OXYGEN (mg/L)					
TRANSECT#	CONDUCTIVITY (mS/cm)					
DAR_CODE	pH					
STREAM	TURBIDITY (NTU)					
TRIBUTARY	TOTAL SUSPENDED SOLIDS (mg/L)					

Transect Line

Gate Height - now = 0.95 ft.

old Gate Height = 0.7 ft.

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

22.54

269 ft

BANK
FULLBANK
FULL

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Stream Edge Width (feet)																				21	19	
Stream Edge Depth (feet)																				0.5	0.9	
Flow Rate Width (ft/sec)																						
Flow Rate Depth (ft/sec)																						
Substrate/ % Vegetation																						
% Plant Coverage																						
Mean Velocity ¹ (ft/sec)																				0.03	(0.01)	
Surface Velocity ² (ft/sec)																				0	(-0.03)	
Bottom Velocity ³ (ft/sec)																				(-0.02)	(-0.02)	

DATE		HYDROLAB				FLOW
TIME	WIDTH (feet)	TEMPERATURE (°C)	DISSOLVED OXYGEN (mg/L)	CONDUCTIVITY (mS/cm)	pH	TURBIDITY (NTU)
OBSERVER Re + MM		23.04	8.55	0.151	8.24	
REACH						
TRANSECT#						
DAR_CODE						
STREAM						
TRIBUTARY						

staff gage @ Araki crossing = 0.166 ft
 staff gage @ fast EKE diversion = 0.4 ft
 temp probe #5? take out at 2:04 pm

Transect
 Line

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

5.5 ft

$$\boxed{15.7}$$

STREAM EDGE

STREAM EDGE

BANK
FULLBANK
FULL[illegible]

HYDROLAB

FLOW

New Graze = 0.92 Ft.
Old Graze = 0.69 Ft.

Oct 6, 2004
15:28

WIDTH (feet)

TEMPERATURE (°C)

7397

DISSOLVED OXYGEN

21

CONDUCTIVITY

0.69

pH

97

TURBIDITY (NTU)

TOTAL SUSPENDED

DIVISION OF AQUATIC RESOURCES GRH 2/02

SITE PICTURE

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

BANK
FULLBANK
FULL[illegible]

DATE		HYDROLAB				FLOW
TIME	1:15	WIDTH (feet)				Staff gauge 1.05 ft IN Tunnel
OBSERVER	AMJ	TEMPERATURE (°C)				
REACH		DISSOLVED OXYGEN (mg/L)				
TRANSECT#	.	CONDUCTIVITY (mS/cm)				
DAR_CODE		pH				
STREAM	Inside Tunnel	TURBIDITY (NTU)				
TRIBUTARY		TOTAL SUSPENDED SOLIDS (mg/L)				

Transsect Line

- Diversion now flowing

SITE PICTURE

Hillawe above Rd Xing, Research Trip - High Flows!

FLOW DATA SHEET

-Took AM Photo of Hillawe Falls w/ Nikon D-100

STREAM EDGE

BANK FULL

STREAM EDGE

BANK FULL

Stream Edge Width (feet)	24.9	23.0	21	19	17	15	13	11	9	7	5	4	3	2.0					
Stream Edge Depth (feet)	0	0.5	0.9	1.3	0.6	1.9	2.4	2.4	2.2	2.1	1.8	1.9	1.8	0					
Flow Rate Width (ft/sec)																			
Flow Rate Depth (ft/sec)																			
Substrate/ % Vegetation																			
% Plant Coverage																			
Mean Velocity ¹ (ft/sec)		-0.04	-0.11	-0.09	-0.07	-0.06	0.70	0.99	1.32	1.40	0.24	-0.21	-0.08						
Surface Velocity ² (ft/sec)		-0.06	-0.13	-0.17	-0.09	0.22	0.54	1.36	1.41	1.59	0.39	0.10	0.17						
Bottom Velocity ³ (ft/sec)		-0.07	-0.18	-0.06	-0.14	-0.08	0.51	0.03	0.53	0.54	0.10	0.21	-0.15						

HYDROLAB

DATE	21 June 2005
TIME	1354 hrs.
OBSERVER	RE / DSD
REACH	
TRANSECT#	
DAR_CODE	
STREAM	Hillawe above Rd Xing
TRIBUTARY	

WIDTH (feet)	21.95
TEMPERATURE (°C)	21.95
DISSOLVED OXYGEN (mg/L)	6.78
CONDUCTIVITY (mS/cm)	0.086
pH	7.12
TURBIDITY (NTU)	4.6
TOTAL SUSPENDED SOLIDS (mg/L)	

Stream depth (feet)

Transect Line

Stream width (feet)

