L.

Hazard Heights Bridge — BOB LONDON

Date	Time	Stage(1)	Velocity	width		start RAIN	RAINFALL
Nov 13-98	9.30	16'1"	18sec/25ft	E 40' W 15'			
Nov 17	0950	13'-7"	5.6sec			1800 (11-16)	
Nov 17	1630	14'-1"	5.0 sec ←		bottle broke		
Nov 20	2100	15'-3					
Nov 21	0730	6' 10"					
Nov 21	1400	(1) 2'-11"				Peak at 1330	
Nov 21	2000	6'-8"					
Nov 26	0745	12'-7"	4.5sec				1.14" Rain
Nov 26	1500	11'-10"	4.25sec				
Nov 30	0900	12'-6"	4.5				.93 Rain
Nov 30	1600	12'-5"	4.3				
Dec 2	0745	9'-1"	4.0				1.72"
Dec 2	1140	7'-4"	4.4			Peak at 10 40	2.00
Dec 2	1650	8'-6"	4.2				2.45
Dec 13	1410	15' 2"	12.0				1" since 732 AM (1.19)
JAN 14 '99	2030	16'-1"	?				0.75
JAN 15	1830	14'-5"	9.4				1.30
JAN 16	0740	14'-4"	7.6				1.42
JAN 16	1215	14'-7"	8.0				1.42
JAN 18	1650	14'-8"	8.2				2.28
JAN 19	0845	14'-1"	5.7				corr 3.40"
JAN 19	1705	13'-4"	4.1				CT 3.62"
JAN 20	0840	14'-0"	5.7				CT 3.73
JAN 20	1330	14'-2"	6.3				—
Feb 6	0850	14'-9"	9.0				CT 1.53
Feb 6	1430	7'-4"	3.7		Wire Jam		CT 2.28
Feb 6	1745	10'-0"	4.5				CT 2.29
Feb 7	0840	8'-3"	3.6				CT 3.28
Feb 7	1720	11'-9"	4.2				CT 3.40
Feb 8	1625	13'-7"	8.0		SAMPLE FROM BANK		CT 3.78
Feb 9	1735	11'-11"	4.4				
FEB 10	0735	13'-4"	4.2				

(1) TO TOP OF WOODEN RAIL

CT = Cumulative total

(2)

Tsa Luvchesi-Cook
444-8953

Date	Time	Site	Stage	Velocity	-notes-
1/14/99	11:15 AM	HH	15'11¼"	51.35 sec.	rain began ½ hr. ago
1/15	8:40 AM	HH	14'3¾"	7.22 sec.	
1/15	3:10 PM	HH	14'5¾"	6.98 sec.	rain beginning to fall again water level past peak
1/17	12 noon	HH	14'10"	10.43 sec.	
1/18	-				
1/21	10:20 AM	HH	14' 0¾"	5.7 sec.	end of storm
1/22	3:00 PM	HH	14" 3"	6.18 sec	↑wind, rain began in AM
1/23	8:00 AM	HH	11'10½	4.8 sec.	
1/23	1:00 PM	HH	11'4½"	4.5 sec	sunny-skies clearing
1/31	12:45 AM	HH	15'4½"	12.4 sec	sprinkles x2 days ↑today
2/6	11:10 AM	HH	12'2¼"	4.1 sec.	really murky, ↑rain
2/6	1:15 PM	HH	7'10" flooded	3.7 sec	flooded
2/6	1:15 PM	HH	sample taken from flooded road - mid-channel		
2/7	10:45 AM	HH	8'7½"	3.9 sec	road just flooding (1" on road)
2/7	2:40 PM	HH	10'11½"	4.7 sec	receeding
2/8	1:25 PM	HH	13'9¼"	6.6 sec	
2/8	3:00 PM	HH	13'8¼"	5.3 sec	
2/9	10:45 AM	HH	10'3½"	3.9 sec	Lots of snow in Knoxland today sleet
2/9	3:15 PM PM	HH	11'6½"	4.4 sec	
2/13	2:00 PM	HH	14'8½"	8.1 sec	
2/18/99	10:40 AM	HH	13'11½"	4.5 sec	
2/18	1:45 PM	HH	12'9¾"	4.4 sec	
2/20	6:00 PM	HH	14'6"	6.5 sec	
2/23	3:00 PM	HH	13'0"	4.8 sec	
2/24	2:45 PM	HH	14'3½"	5.4 sec	
2/25	10:30 AM	HH	11'6¼"	3.7 sec	
2/28	2:30 PM	HH	13'1¼"	4.2 sec	

#30 Little South Fork L.S.F 3/14/99

16:35

15' WIDE UPSTREAM

7"; ; 13"; 11"; 9"; 9"; 15"; 13"; 10"; 7"; 8"; 7"; 5"; 6", 2"

RL RR

15" WIDE DOWNSTREAM

5"; 9"; 8"; 9"; 10"; 11"; 10"; 9"; 10"; 7"; 8"; 8"; 6"; 6"; 6"

RL RR

13.0

Fast water 16:35

5.68 sec 16 feet

4.87 sec; 3.99 sec

Slow water - 6' wide this side (RR)

4' wide other side (south) (west)

8.78 sec

6.97 sec

6.63 sec } edge of slow to fast

8.43 sec

4 | 25.81 = 5.95 sec

14 | 11 8 8/14

112

hydrograph & falling limb

MAY 3

CL ↓ 3'7" ≈ 1.9 on Stonelocher gauge 19:32

8.1 sec/10' far side

7.47 sec center

5.47, 5.40, 5.72 sec near side $= \frac{37}{3} = 12 + 5.40 = 5.52$ sec

Park ↓ 15'7" guard rail 4:38/sec/141' 144" / 43 ↓ 187"

GG ↓ 46" ↑ 5.16, 4.12, 3.72 / 20' 19:46

$\frac{40}{144}$ 3 | 184 $\frac{61}{184}$ 3.72 / 61 / 4.33 sec Av.

TR ↑ 1.3 19:50

3-14-99 SUNDAY Page 1 Clark's

11:47 AM
CULVERT #10
Large maple - moss covered (B4 town of Falk)
24" culvert dia 30' LENGTH
↓ 20
7.79 seconds thru culvert
7.09 " " "
H_2O sample taken
>1000NTU
1014 Clark

11:58
CULVERT #11 AT TOWN OF FALK
24" CULVERT dia
↓ 17"
7.63 seconds
8.60
40' LENGTH
X From 3-large trees w/ivy
30'-40'
264 NTU

Skip culvert #12 - road culvert only
fairly clear

12:12
CULVERT #13
18" culvert dia
↓ 15"
9.65 sec
10.72
40' length
121 NTU
PAST FALK - X from Large maple w/moss & big scar from limb being cut low down facing road.

12:21
CULVERT #15 (300' more) starting uphill - by a big rotted stump
24" CULVERT dia 42' LENGTH (@ ELBOWS - Broken open) - riprap at elbow on down hill side of road.
↓ 16½"
62.0 NTU
~~6.38 sec~~
5.55 sec
5.22 sec

#16 - Road ditch @ ~~culvert~~
Just after pond on left

#17 - at slide - old culvert
rusty - rotten -
24" culvert
FLOW
10" X 1½"
2'/2sec
flow also under culvert
bottom of culvert rusty

#18 - skip - sticks out of ground @ 8' on riverside

#19 - skip @ 100' aways
east end of slide
12:51

#20 Humb. X-ing
20" wide
5" deep average
flow - 3'/2sec
culvert above
solid kind - smooth sided
(on container already
1/22 11:30
1/4
Z96

RN5 N5

#21 13:01
CREEK
4½' CULVERT DIA
↓ 34"
30' LENGTH
10'/3.88 sec
3.15 sec
NONE

Discharge
downstream end velocity
12" wide
9"; 11"; 9"; 7"; 6"

10' upstream
18" wide
9"; 7"; 10"; 7"; 7"
Time 2:45 sec
2.44 sec
2.13 sec

RN #64 Picture taken
S.F. ELK RIVER

#22 MILE 2½ ON STUMP
orange paint
also says Rock in yellow
road ditch Culvert

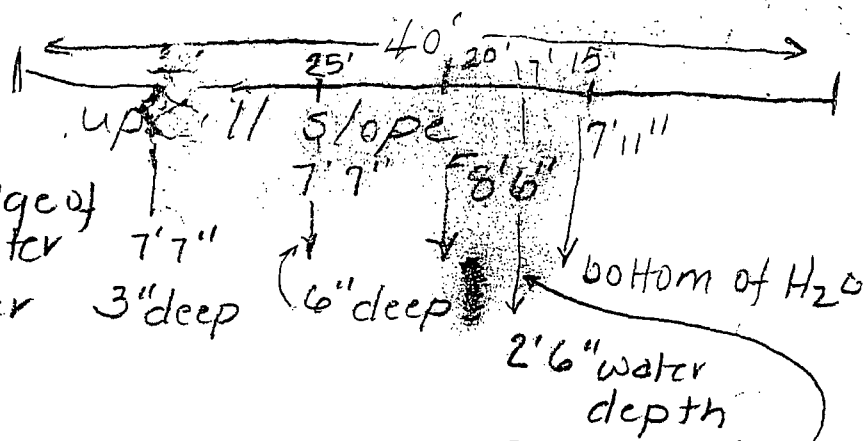
#23 13:39
12" CULVERT
↓ 8" 212 NTU
23' LENGTH
5.35 sec
5.56 sec
4.55 sec
3 | 15.46 = 5.18 sec
WLPZ in blue on fir tree yellow 96 in △
Note: writing on pink flagging says new 24" armour outlet end

13:49
#24 SOUTH FORK AT IRON Bridge
STAGE 17' 4" below top rail - upstream rail
at ℄ of S.E.
95.1
22' LENGTH
3.78 sec
4.13 sec.

#25 CLEAN WATER LSF
14:06
40' LENGTH
18" CULVERT dia
↓ 15½"
8.53 sec
7.29 sec
2 | 15.82
7.91 sec

#26 Road Ditch
Stump down hill side.
orange 3½ on uphill stump

14:30 Little
#27 South Fork
4th weld upperside
stage 9' down - (9' with 1'5" wrapped around rock)



30.1

Velocity
~~5.31 sec~~ 4.25 sec
~~5.10 sec~~ 4.28 sec
LENGTH 15'

(TRIB 1 IS JUST BEYOND #27 BRIDGE (LEFT DITCH IS TRIB 1 CREEK)

#28 PULLED X-ING LSF Trib 2
15:38 6½' wide @ upper end
6' wide 32"; 23", 15", 11", 7", 2"
tributary to Lil-South Fork

29.6

10 feet Length · 9' wide low trend
4.50 sec fast
4.25 sec slow 4", 7", 6", 15", 12", 10", 6", 6", 3" = 69 / 9 = 7 2/3

#29 piping 16:21
EDGE OF CLEAR CUT - ROAD ABOVE THIS AREA
SOUTH WEST ABOVE Lil-S.F.
1/3 OF WAY DN TO Lil S.F. 2"x4", 1/sec

191

11-29 15:25 Yager Stage 2.5' Vel

12-2	21:30	HH	7'2" * 5sec/2.5ft feet
12-2	21:50	mc	2'9" * 5sec/10ft
12-2	22:07	CL	0' to Yellow line
12-2	22:15	Park	11' 7 to rail 3.6sec/13ft
12-2	22:25	GG	12' below stage plate 3sec/2.2
12-3	8:10	HH	10'7" * 5sec/1.50 feet
12-3	8:25	MC	4'8" 5sec
12-3	8:30	Park	13"2" 5s
12-3	8:40	GG	4'1 3sec/2.25ft
12-3	8:50	CL	8½" —
12-7	7:15	HH	14'8" to rail no sample
12-14	p.u. samples from 1 inch storm — low flow samples ↓		
1-13-99	GG	17:31	— — 4inch deep average 4' width
1-13-99	Park	17:45	16' to top of railing V= 8sec²/13ft.
1-13-99	CL	17:55	2' below yellow line no V.
1-13-99	MC	18:00	5'5" to inside culvert top ~~of~~ stage ~~to~~ bottom = V= 6sec/ft
1-13-99	HH	18:25	15'10" to railing 22sec/10ft barely moving at all no feet H_2S

HH = 54"
Park = 39"
MC culvert = 21" thickness
top of stage

HH Field Flooded → misty rain?

JE 1

Freshwater Creek Storage Notes

DATE	TIME	SITE	↑↓ Stage	Feet/Sec.	Sample NTU	JAR HACH, ¼, est	Comments: rain? Depth
Nov 17-98	12:AM	HH	136"	18sec/25ft	○	Heck	since 3:30pm
Nov 17 98	12:15a	Park	161	8sec/13'	* ○	Heh	
11-17.98	12:44a	Graham	5'4"	60sec/22ft		BigVial	1'6"
11-17 98	12:50a	MC	5'3"	60sec/10ft		¼ g	blank
11-17-98	1am	Seeley	12'6"	11.19/20ft		½ g	MC 5/25
11-17-98	8am	HHO	108"	5sec/25ft	○	¼ g	5.5 3/31/98 17. High tide 9:45
11-17 98	8:15	MC	4'10	60sec/10-			
|	8:20	Park	130.5	3sec/13'	* ○		
|	8:30	G	4'6"	55sec/22-			
|	8:35	Clancy	12"	-			
11-17	8:45	Seeley	10' 1"	-			
11-20	11 pm	HHO	133"	125sec/25ft	* √		
11-20 98	11:15pm	MC	5'2.5"	55sec/10ft			since 3pm
11-26 98	11:50pm	Park	147"	5.8sec/13'	* √		
11-21	12:00a	G	5'2"	55ec/22			
11-21	12:20a	CL	15"	-			
11-21	12:40a	Seeley	10'4"				
11-21	9:25a	HH O	24"	No sample			
	9:30a	MC	0"	No sample			
	9:35a	Park	111	2.6sec/13'	* √		
	9:40a	G	6" below topo & stage pipe				*
8 or other samples on 11-21 see next page	9:40a	CL	-6"	-			
	5:00p	HH	0"	-	ok		
11-22	17:00	G	4/9	5sec/22ft			

X DEC copy

		Stage	
2-18-99 GG	2:50pm	4'5" yellow line	3.19sec/ 22ft
2-18-99 [illegible]	2:59p	12" ↓ yellow line	28↑ stage gauge
2-18-99 NFElk	4:45p	11'5"	
2-18-99 GG	5:27p	4'5"	3.41sec/ 22ft
2-18-99 MC	5:35p	6'5" top of Culvert ↓	4.5sec/15ft

DE 6

Kevin 444-9056 lives in freshwater, may want to volunteer

11.22.98 1:40 pm
HH 11/23
Heather McCausland
Dan Ehresman

Stage 7'9" from washer to top of cement
Stream width 5-4'
fast current 2'
3.5 seconds
3.5 seconds
4 seconds

Park Bridge
Stage 10' ± from underside of bottom rail
Stream width 33'
fast current 23'
2 seconds
2 seconds
1.5 seconds
2 seconds

CL
Stage 3' up to bolt
12.5 seconds
9.5 seconds
12 seconds
10.5 seconds

GG
Stage 1' 7" to top of metal pipe
Stream width 15'
fast current 11' 6"
1 second
1 second
1 seconds

DES

11-22-98 11 a.m.

→ Howard Hughes Bridge
Stream width - 43'
fast current " 23'
Bridge width = 21' 9" = 25' @ angle
height from middle of bridge 13' 4" railing
velocity
fast { 4 sec.
5 sec.
5 sec.

Water sample gathered
N. W. side of Bridge
11-22-98 10:15

Park Bridge
Stream width 28' 6"
fast current 21'
Bridge width 12' 9"
height from middle of bridge 13' 9" railing
Velocity 2½ sec.
2½ sec.
2½ sec.

Water Sample taken
from road for right side
of bridge
11-22 12:00 pm

Covert - Cloney CL
16 ft. Stream width
fast current
height from top of covert 8'
width from 57'
18 sec.
20 sec.
16 sec. } Seconds thru culvert

Water Sample taken
before covert, facing
Stream Left side

Graham Guild 12:30
10' fast current
10' 9" Stream Width
1 sec/8'
1 sec
1 sec
height from marker 2' 6" from top of Metal pipe

16

Ross Taylor
839-5022
H County

→ Old Jacoby Bridge 1 pm
Stream width 39'
Bridge height 10' @ railing
fast current 29
width of bridge 10' 6"
7 sec.
7 sec.
7 sec.

Marker height 3' 7" ↓ on PVC pipe

H. H. - Howard Heights
P. B. - Park Bridge
CL - Cloney Covert
OJ - old Jacoby
GG - Graham Guild

11-22 4 PM
HH 25' Bridge width @ angle
height 14' 2" @ railing
Stream width 42'
fast current 20'
5½ sec.
5 sec. } by current
5 sec.

Park Bridge
width 12' 11" @ railing
height 14' 2"
width of stream 27' 9'
fast current 19'
4 sec.
3 sec.
3½ sec. } fast current

Cloney
22 sec.
25 sec.
20 sec
Stream width 12' 11"
GG -
height @ marker 2' 7" from top of metal pipe
Stream width 10'
current width 8'
1.5 sec.
1.5 sec.
2 sec.
2 sec.

PALCO Rd
Park Bridge
Cloney
HH Bridge
old Jacoby Rd
3 corners

No. 1104

26 JAN '98

Erica Upton
Terry Roelofs

Water samples in Freshwater Basin - 9pm

~~740~~ NTU

#1 Graham Gulch 740

stage [illegible] 39.25" from top (cm)

#2 Freshwater Park

stage 113.5" (cm) 298 NTU

#3 Cloney Gulch 189 NTU

stage 8" down from yellow (upper mark)

#4 McCready Gulch

stage - NO sample

#5 Howard Heights 281

stage 56.75" NTU

from bottom of bridge (cm)

14 Feb - 2:45 pm

Sample #1 - 2:45 pm

Freshwater Creek @ Upton (Palcamp Rd bridge)

176

#2 - Graham Gulch

@ 2:50 and stage was ~~3~~ 4(?)

593

#3 - Freshwater Park

2:55 pm stage is 134 inches

291

#4 Clooney Gulch

3 pm stage is 13 inches

from Pho 2 chalk mark

233

#5 Clooney Gulch Rd Diversion

3:03 pm

631

#6 Howard Hts.

@ 3:10 stage is 99 inches

252

27 Jan 98

T. Roelofs

Turbidity samples in filed carry

#1 Howard Heights 159

stage 94" @ 0830

#2 Clooney 80.5

stage 15"

#3 FW Park 127

stage 13"

#4 Graham 397

stage 54" @0838

15 Feb '98
T. Roelofs

Sample No.
1 Howard Heights @ 10:20AM
stage 96" 85.4
#2 Cloney Gulch @ 10:30
stage 14" from "22" 68.2
#3 Freshwater Park
@ 10:38 72.4
stage 131.25"
#4 Graham Gulch @ 11AM
Stage 56.25" 183
#5 Palcamp @ 11:10AM
65.9

19 Feb '98
#1 PLC Rd forest 643
runoff 4:10 pm
#2 Graham Gulch 405
stage @ 4:15 pm 39.5"
#3 Freshwater Park 336
stage @ 4:20 pm 109"
#4 Cloney Gulch 236
stage @ 4:26 4" below
"22" chalk line
#5 Road runoff 256
opposite steel barrel
on main road
#6 Howard Heights 337
stage @ 4:35 pm 40"
#7 Palcamp @ 5 pm
320

2/1/98

Jacoby 11:05 102/sec 76↓
9'x30" 11"x4" 57.8

HH 11:22 13 poles wide 116↓
67.8 7.57 sec 28"↓ 12"/9'
← 16" →

MC 11:36 5.5 sec/10 feet 66↓
7" deep 78.8

CL 11:40 8.83 sec/10'?
5" deep 95.6

P 25' wide 24" deep 4.31 sec/10'
108 58↓

GG 6' wide 9" deep 3.98 sec/10'
221 5' wide 4" deep

F@GG 10' wide/24" deep/4.6
62.9 8' wide 9"/12.13 sec/25'
6' wide 4"/3.25' sec

NF 30' wide 11.13 sec/25'
↓128"

Thank you for your order

L.L. Bean INC
FREEPORT, MAINE 04033

1-4-1-20 D THPT

HP SITES

	Time	Creek Ht	FPS	NTU	Time	Creek Ht	FPS	NTU
	SNAG Creek			NTUs ↓	Rebel Creek			NTUs ↓
1/31	16:00			14.7				
2/6	1545	8"	5.7/6.9	42.0	1615 site 2 unit A	"		127
2/6	1545	18" Pool		39.0	1704 site 3, site 4 unit C			36.0, 45.7
2/7	1720	18 Pool unit A		34.4				
2/7	1720	16" stream		35.1	1741 site 2 unit A			68.5
2/8								
2/8								
2/9	1645	8"	7.35/8.50	17.5	1745 site 2 unit A			40.7
2/9	1645	15" Pool		19.6	1800 site 3, site 4 unit C			25.0 26.1
2/10	1415	stream	10.30/11.55	18.4	1432 site 2 unit A			53.0
2/10					1506 site 3, site 4 unit C			34.5, 30.5
2/11								
2/11								
☆ 2/12	1415	TAKE TO N.C. LABS. stream Sample		17.7				
2/12								
2/13								
2/13								
2/14								
2/14								
2/15								
2/15								
2/16								
2/16								
2/17								
2/17								
2/18								
2/18								

		Time	Creek Ht.	F.P.S. (36')	Time	Creek Ht	F.P.S. (20')
A	1/31	0:845	26.1	-73"	8.2/9.24		
B	1/31	17:50	26.6				
C	2/1	0:900	15.9	-76"	8.15/8.29		
D	2/1	17:50	30.6	-72"	8.19/8.50	L 16:00	34.19" AVG. 7.51/11.0
E	2/2	10:30	85.5	-57"	7.25/7.50	M 11:15	31.41" 7.15/7.20
F	2/2	15:40	47.4	-62½"	7.71/8.50		
G	2/3	09:40	109.0	-55"	6.30/7.10	N 10:20	32.51" AVE 6.3/8.41
H	2/3	17:55	68.2	-64"	*5.10/6.09		
I	2/4	08:15	44.2	-69"	7.10/7.34	O 08:30	34.79" AVE 9.4/10.31
J	2/4	16:20	36.0	-70"	7.44/7.70	P 16:00	34.29" AVG 7.5/9.[illegible]
K	2/5	09:45	30.5	-74"	7.29/8.20	Q 10:20	8" AVE 10.40/12[illegible]
	2/5						

SNAGLY (SINGLE SAMPLE TAKEN AT HAUL ROAD) THP UNIT A.
14.7

Rebel 680 Gardner Lane

		TIME	CHECK #1	FF	NUS	TIME	CHECK #1		
JAN									
	1/31	0845	-73"	8.2/9.24	26.0				
	1/31	1750	←		26.6				
FEB	2/1	0900	-76"	8.15/8.29	15.9				
	2/1	1750	~~-72" 8.19/8.50~~		~~30.6 35.8~~	1600	9" AVG	7.51/11.00	34.1
	2/2	1030	-57	7.25/7.50	85.5	1115	11" AVE	6.15/7.70	31.4
	2/2	1540	-62½	~~7.11/8.50~~	47.4				
	2/3	0940	-55½	6.30/7.10	109.0	1020	11" AVE	6.3/8.41	32.5
	2/3	1755	———		68.2 = 68.2				
	2/4	0815	-69		44.2 = 44.2	0830	9" AVE	9.40/10.0	34.7
	2/4	1620	-70		36.0 = 36.0	1600	9" AVE	7.50/9.10	34.2
	2/5	0945	-74		30.5 = 30.5	1020	8" AVE	10.20/12.42	~~34.2~~
	2/5	1730	-74½		28.6 = 28.6	1655	7½ AVE	12.50/13.50	~~34.2~~ 37.5
	2/6	0830	-70		52.5 = 52.5	1030	10" AVE	5.6/6.3	51.5
	2/6	1845	-60½		89.3 = 89.3	1925	9-10" AVE	8.12/9.15	40.7
	2/7	0950	-68		43.1 . 43.1				
	2/7	1520	-46		128	1655	12" AVE	4.83/5.12	38.9
	2/8	1330	-33½		183				
	2/8	1830	-40½		157	1700	11" AVE	6.29/7.2	32.1
	2/9	1230	-62"	7.1/7.7	64.5	1315	9-10"	7.53/8.54	32.9
	2/9	———				———			
.1	2/10	0736	-70"	7.44/7.91	33.2	0846	~~18~~"	10.55/12.94	~~AT HOME~~
	2/10								
HI TIDE	2/11	1135	-73"	7.46/7.60	32.3				
LOW TIDE	2/11	1820	-75½"	8.25	25.1	1845	7"	~~DOWN DOCK~~	28.8
	2/12								
	2/12								
	2/13								
	2/13								
	2/14								

Salt Flood 11-21-98

Bob Morisen

Tracy Barnes priestley 826-2920

Swaney	19' 8"
S. Swaney	bellow top
Jacoby	of rail
creek	56'+ wide
	40' fast water
	15' wide bridge
	3.0 Seconds / 15 ft
	2.25 sec.
	2.97 sec.
	2.13 sec.

Old Jacoby clicks @ 6-8 ft spacing
24/10 sec center
7/10 S Side of pier 7/10 S. Side of pier
20/10 center
12/10 center
14/10 center
6/10 N Side of piers
6/10 "

7/10 = 7 clicks on CURRENT METER/sec

HH 15:16 ↓ 11.5" @ North Pier field flooded to white gate at telephone pole
grab samples & DIS

Tom/MIKE CC 441 1755

MC 15:35 @ 12" ↑ above had been 12" higher
8'/7sec

DIS SAMPLED TO BOTTOM @ center of culvert

CL ↓ 13" bolt at Metal Culvert connection ... from Concrete form liner (white concrete crack)
16:05 ↓ 7

10'/1.56 Sec (C) 10/2.1 Sec (R.R.)
10/1.7 Sec (R.L)
thru - fast 8.4 8.2 7.4 Slow 11.8 sec
60-65'
10' 40' 10'

Park 81" ↓ 1.9 2.1 2.4 sec/14'
16:25 Fast Water 16' wide
total 39' slow 5 sec/14'

TR RL 5.2 sec/33'
4.9 sec
C 4.1
5.2
9.6
13.2

5' = Yard Stick
0.1' Stump
30
had been 25" higher

GG slow RR = 4 sec 25'
@ CULVERT ↓ 30" ↓ 24" RR = 3.1/25'
C = 2.3

Note 104

J.L. DARLING CORP TACOMA, WA 98424

11/7/98	11:13	Jacoby (old)	↓70"	9.53 sec THRU	169
	11:24	MH	↓118	7.25, 7.41 THRU	182 NTU
	11:26	McCready	↓61 ↑9	6.84/10'	835
	11:55	Clancy 266	↑8"	7.09/7.59, 6.87/10'	
	12:40	TR 73.0	↑19 = 13↓ on last years stake	STUMP	3.98, 7.62, 8.91/20', 10.09
	13:35	GR last year 61"↓ = 10"	217 NTU	4.25/20'	6" 7" 2' 2' 2" = 9'
11/8	7:40	Jacoby	↓73.5	10.48 sec	
	7:55	MH	↓122	10.31, 14.81	51.5
	8:35	McC	↓60 ↑4"	6.88 7.37	89.8
	10:38	Redwood Creek Brickhill @ Seely	red dot		139
	8:00	GRAHAM			64.0
11/9/98	15:35	old Arc. Rd. Bridge	↓82"	6.38, 7.52, 13.0 sec/15 feet; 11' wide	
	16:25	Brookwood	52.5'	22.12 sec/25 feet; 40' wide	

MCREADY STAGE MEASUREMENTS ARE ↓ DOWN FROM CONCRETE OVERHEAD
↑ UP FROM GROUND SURFACE (STREAMBED) TO ACCOUNT
FOR CONCERN RE: SEDIMENTATION

Nov Tues 17, 1998

Cow C (Little River) V = 13.62, 8.15, 6.13/24' S = 47" S* = 56" time 9:15

Jacoby (Old) V = 5.47, 6.35/10' S = ↓26" S* = 32" ↓Bridge = 48" time 9:56

time thru bridge in fast sta = 9.06, 8.69 122 NTU

Brookwood V = 7.97 4.94 4.47/2' ↓60" metal pole = S 96.8 NTU time 10:11

HH V = 5.84, 5.41, 13.44 ↓98" 221

MC V = 4.35/10' ↓58" 202 11:00

NF 17 V = = 27.53/45' S = 1" 12:35

HH THRU 2.47 ↓106 2:05 Sat AM

MC 2.97/10' ↓42" 2:15

CL ↑14 2.25/10' 2:28

GC ↓27", ↓52" = 70 ↑ Mark on Plastic

→ ON Culvert edge 2.21 Sec 25' fast

→ ON Mushroom type Slow = 3.54

Park ↓121 4.41, 4.47/THRU fast

Cow Corner ↓47 [7.M, 300, 0.07] Sub county ~~at flood plain~~

(CLRA)

11-21-98

Bridge V = 17 sec. S = 16.7" 9:45 AM

LRB

OLD Jacoby ↓11" Road flooded to 10-15" 8.21 sec

↓5" PVC Stage top of gage 7.54 THRU

3/29/99

GG 18:29 ↓59" ↘CV GIS

Sec – 5.25 / 4.99 / 5.34 / 4.86

FOR 20 FEET

Park 18:37 6.57, 5.57, 6.23

STAGE = ↓143" FROM DECK 15'2" FROM RAIL

ROAD # 4J060 PM 0.03 BRIDGE # 4C-136

HH STAGE ↓9"3" = ↓14'8" FROM RAIL

BRIDGE # 4C-49 ROAD # 4J010 PM 0.01

23.8' rail to rail V = 10.81 sec / 11.69 sec

SAMPLED RR

C

Hi!

Stacy - 822-5769 677-0506

Erica

Heres the r[illegible] in the rain paper to record your Data

GG - Graham
TR - Teris
Park

(orange tag to culvert edge)

I have no watch!

Date	military Time	Site	Stage	Velocity	Comments
1-17-99	5:35 AM	GG	4½' (guess)	too dark — fast	
1-18-99	1:10 PM	GG	4' 8½	6 sec. (center)	
1-19-99	1:05 PM	GG	4' 4"	5 sec. / center	5 sec. River left 5 sec. River Rig[ht]
~~1-20-99~~	~~10:45 AM~~	~~GG~~	~~4' 9½"~~	~~6 sec @ center 6 sec @ River left~~	~~[illegible] sec. @ RR~~
2-6-99	12:20 PM	Park	7' 9"	3 sec @ center	
2-6-99	12:25 PM	GG	↓32	12:55 DIS ALL STATIONS 20'/2.83 center	3.43 sec R.L
Jesse 2-6-99	12:36	Park	↓ 96" = 135 G RAIL	14'/3 sec, 2.47 sec @ center	
2-6-99	12:45	GG	3 ft	River left = 4 sec	cntr. = 4 sec. River Right = 4.5 sec.

Cable C

.0 ↓21" 20:13 9.98

.3 ↓6" 36"X6" 20'/1.6" 7.42

Cabin ↓24" 7'X12" 10'/1.62 24.8

1.6 Landslide 3'X1' 60.4

2.3 Tmb 2 42"X6" (below rd) 19.8

5'/1.75 sec 20:31

Cow 20:38 65" ↓ 7.44 sec THRU 14.9

Calf 21↓ 10.9 sec THRU 38.9

Tmb 2 36"X6" 10'/5.78 sec 10.4

20:50

22.12 ↓43 48"X12" 10'/1.65 sec 17.8

21:02

22.8 442 60" Culv 48"X18" 21.6

1.32 sec/10' 21:09

Stowers

41.59 ↓32 at edge 16-20' wide

10'/2.41 sec 21:20 11.9

2/27/98

5.7 30" CV ↓26½/3"X20"/3'/2.16 sec 15.1

6.0 48" CV ↓44" 36"↓ to Bottom White Pipe 51.5

5"X3'/3'/1.2 sec

1.2 12:00 2/26/98 6.84

STIEZ 132

Forest 12:24 (Labeled 4.7) 23.1

below Unit (2)

4.4 (437) Next CV

5.5 Sample ~12:30 13.3

6.0 ~12:40 84.2

#1

2/27/98

MI 0 16:46 25'/3.88 sec/1"X25" 46.7

.5 17:00 8'/1.2 sec/2"X6" 20.7

.55 CV 16:51 7'/4.22 sec/6"X24" 9.32

1.2 CC 3"X8'/3.6 sec/17" 6.67

STR 17:11 8"X6"/10'/3.65 sec 25.3

1.75 PHOTO of Stafford Slide with rapids in foreground

RdGate at New THP 1"X6" 8"/sec 1.55

1.9/2.1 RR 17:20 6'/4.51 sec/6"X26" 15.0

2.05/2.25 36" CV 10'/3.87 sec 8"X24" 10.4

DVF @ damaged 15"X4" 20'/5.69 sec 8.95

2.8 Hill 36"X3" ↓28" 6'/3.3 sec Fractured Mags PHOTOS 14.0

4.3 Fount 3'/1.78 sec/14"X3"/17:49/↓20", 24" CV PHOTOS 29.0

4.7 437 17:57 36" CV ↓33" 4"X22"/6'/2.97 sec 29.6

4.75 18:04 49½ 1"X2"/6"/sec 9.76

5.5 18:06 48" CV ↓39" 29"X8"/3'/1.46 sec 18.3

Bell
0 ↓21" 20:13 1.78
.3 ↓6" 36"X6" 20:14 7.42
Cabin ↓24" 7'X12" 10'/1.62 24.8
1.6 Landslide 3'X 1' 60.4
2.3 Tmb 2 42"X6" (Hillward) 19.8
5'/1.75 sec 20:31
Cow 20:38 65" ↓ 7.44 sec Thru 41.1
Calf 21↓ 10.9 sec THRU 38.9
Tmb 1 36"X6" 10'/5.78 sec 10.4
20:50

22.12/ ↓43 48"X13" 10'/1.65 sec 17.8
21:02
22.87 44↓ 60" culv 4'8"X18" 21.9
1.32 sec/10' 21:09

Sewers

41.57 ↕32 at elev 16-20' wide
10'/2.41 sec 21:20 11.9

2/27/98

5.7 30"CV ↓26½/3"X20"/3'/2.16 sec 15.1
6.0 5.43 48"CV ↓44" 36"↓ to Bottom w/ white pipe 51.5
5"X3'/3'/1.2 sec

1.2 12:00 2/26/98 6.84
STIEZ 132
Forest 12:24 (labeled 4.7) 23.1
below Unit (2)
4.4 (4.37) Next CV
5.5 Sample ~12:30 13.3
6.0 ~12:40 84.2
#2

2/27/98

M10 16:46 25'/3.88 sec/1"X25" 46.7
.5 17:00 8'/1.2 sec/2"X6" 20.7
.55 CV 16.51 7'/4.22 sec/6"X24" 9.32
1.2 CC 3"X8"/3.6 sec/17" 6.67
STZ 17:11 8"X6"/10'/3.65 sec 25.3
1.75 MI PHOTO of Stafford Slide with angle in foreground
Rd&Gate at New THP 1"X6" 8"/sec 1.55
1.9/2.1 AR 17:20 6'/4.51 sec/6"X26" 15.0
2.05/2.25 36"CV 10'/3.97 sec 8"X24" 10.4
OVF @ deranged 15"X4" 20'/5.69 sec 8.92
2.8 Hill 36"X3" ↓28" 6'/3.38 sec Fine Sed Mags 14.0
4.3 Forest 3'/1.78 sec/14"X3"/17:49/↓20", 24"CV PHOTOS 21.0
4.7 4.32 17:57 36"CV↓33" 4"X22"/6'/2.97 sec 29.6
4.75 18:04 4.92 1"X2"/6"/sec 9.76
5.5 18:06 48"CV↓39" 29"X8"/3'/1.46 sec 18.3

			t1	t2	t3	V	R	
2/6	13:00	12.5↓	10.9	11	13	1.8	.8	300
2/10	11:30	13.5↓	12.3	12.3	—	1.7	.1	
2/11	17:30	16.25↓	13.2	—	—	1.6	.35"	
2/13	12:00	16.5↓	14.9	15.2	—	1.4	"	46.6
2/14	13:00	16.0↓	12.5	—	—	1.7	.95	173
2/14	17:50	13.6↓	11.5	—	—	1.8	.45	410
2/14	23:00	9.4↓	—	—	—	—	.1	514
2/15	13:00	12.7↓	10.5	9.6	—	2.1	1.2	137

BILL SHAPERO

2/4	22:00	NEW STORM	171
2/5	16:00	RAINING	116
2/6	10:00	Day after Storm	541
2/6	14:00	River Highest	71000

2/19/48

MI 0	16:20	12" x CV	2'/sec	38.9
.3	16:25	6" x 38"	5'/1.86 sec	21.2
.33	16:28	7" x 32	10'/1.86 sec	14.0
.7,	16:33	22" x 9'	15'/1.88 sec	47
OVF before ◇ yellow sign				23.8
LANDSlide		4" x 2"	16:35	184
Trib 3		5" x 36	10'/3.35 sec	187
Cow ↓58"		41" x 91	6.6 sec	510
Alg ↓19"		20'/4.17 sec	THRU	698
Trib 2	16:56	9" x 18	8' x 18" 10'/2.89 sec	45.6

17:02	Cabin ↓19		103
17:22	12.12 ↓44"	12" x 48" 10'/1.29 sec	48.5
17:28	should 20 x ?35'		454
STORM OVER for 1 hour			
18:00			
STILL	NO RAIN		
CC 1.2	14" x 5"		38.5
3.0 Trib ↓18"			134
4.3 Forest			15.1
4.57	11↑ 5'/sec .97 sec		139
4.7 MI	48" x 10"		
5.5 MI	↓25" 10' x ?	4'/1.57 sec	331
6.0	10'/1.37 sec	6' x white Pipe	454
.55 ↓6"			64.7

5.5 48"CV ↓30", 12"x30" 10'/1.66sec 255
5.65 20"x6" 10'/2.78sec 36"CV ↓22" 263
6.0 39↓ 48"CV 28"x9" ⌣ 1:45 145
(2) Fairness PHOTOS of CC at 5.5
2 PHOTO of stand failure

2/14
Bull 2/14 1/80./1.06sec (2% flow)
0. ↓24" 36"CVLV 15:31 5.62
.3 2"x36" 5'/2.55sec 15:36 2.99
.33 5"x24" 10'/3.40 sec 15:41 3.51
.7 Calv 7"x70" 10'/2.20 sec 12.1
1.6 15:53 1½"x2" 10.2
2.3 5"x42" 10'/5.28sec 15:57 14.2
2.4 Stump 4"x22" 10'/2.94sec 9.53
2.5 16:02 30"x3" 10'/3.80 sec 16:07 9.22
2.6 Cow 20"x80" 20'/6.67 sec 67↓ 301
12.87 sec THRU
3.3 ONF Lg. Root 4.46
Root 4.07
Class II 3/4"x15" 4.13
2.44sec/8" SV
Calf 3.6 8'x5" 15'/4.03sec ↓22 23.7
Bull 10:29 26"↓ on alder root 566
Old Hyo MI 22.12 Marvin McLean Alm
56"CVLV ↓46" 24"x4" 5'/.66sec 9.89
22.81 8"x30" 10'/2.31sec 15.7

Crooked 10:58 20"x9" 10'/4.13 sec 48.9
1 Mnurtal tree 67.9
41.76 40"x6" 64.7

2/18/98 ↓ 725-2720
Bob Cramer / Strongs Creek
RHorseville Rd Bridge
#1 2/15/98 7:00 AM
47.34" deep AV
20'/8.6sec 186

2/6/98 15:30
86" 20'/13.9, 10, 9sec >1000

#3 2/8/98 11:50 80"
11, 9, 11, 11 secs/20' >1000

Ralph Krauss NF RAIN F/Sec
2/2/98 12.5'↓ TOPRAIL — 2.3
2/3/98 10.9↓ —10 2.0
2/4/98 13.9↓ t1 13.2 t2 9.8 t3 11.4 .4" 1.6
2/5/98 13:00 15.2↓ 10.6 18 — .1 1.4 57.0
2/6 8:00 .8 1163
2/7 17:00 9.25↓ 13.4 10.2 13.2 .8 1.7 545
2/8 10:34 4.5↓ blocked 2.35 534

Tues 2/10 Shriveling

.5 5:29 ↓12	2.4.0
Stitz 14" X 8' CV 1/3 10'/2.4 sec	811
2.1 RR CV ↑6" 5:41, 10'/3.78 sec	50.3
2.35 28↓36 CV 9" X 34" 10'/3.03 sec	27.1
2.5 48" X 5 10'/3.56 sec ↓25"	19.1
4.3 24" CV ↓18 5:59	14.44
4.65 36" CV ↓30 6:02	23.8
5.5 8" X 24" 10'/1.85 sec	51.3
5.6 6:10 20" X 5" 10'/2.9 sec	30.9
6.0 41" ↓CV 6:15	39.5

Sat 2/14 Hard Rain Showers / drizzle

Stafford 4" X 52" 10'/3.35 sec 11:32 Am	
Rd @ culvert to lake 11:39 inside ditch	
to culvert >1000 2" X 8" 10'/7.56 sec	>1000
at "T" 11:54 >1000 rocked road	>1000
MI 0 Stafford 2" X 30" 75'/5.09 sec	>1000
.45 Gate Rd surface 12:00	105
.45 Ditch 6"/BU/1.31 sec	24.7
.55 CULV ↓9" 9" X 26" 10'/2.57 sec	45.8
.7 Propose BU/2.46 sec 6" X 2" PHOTO	>1000
.9 CCO 2" X 9" BU/4.31 sec 12:23	160
1.2 CC. 8" X 8" 5'/4.16 sec	8.55
1.4 PHOTO OF HILLSIDE from road	
before Stitz 2/3 flow = BU/46.3 sec	6.34
STZ 90" CVL ↓62", 11' X 20", 20'/6.03 sec	>100
2.1 RR. CV 5" X 26" in Culvert 12:24	91.9
2.35 CV ↓26"/30" CV 30" X 8" at entrance	62.0
2.5 OVF road 27" X 3" 10'/4.03 sec	15.3
2.8 Skid T in CC 8" X 1"	30.7
2.9 36" CV ↓23" 18" X 6" 10'/3.81 sec 13:03	46.5
drizzle	
3.7 Gate Rd surface 5" X 1/2"	.594
4.1 18" CV 2" X 12" BU/1.18 sec 13:14	16.3
4.3 18" ↓ 24" CV 2 BU/sec	5.76
4.7 13:18 28" ↓ 36" CV @ entrance	53.9
5.1 OVF forest gully	11.4
18" CV 4" X 12" (Road / County)	27.7

2/8

Culvert 17.4 28↓ 48"CV

Cow 63" down 556
18:14
running upward

Calf 48" diameter
20' down 578

Landslide 2"x3"
1.6 miles 204

2/9 NO RAIN 14 hours

MI 0 10:51 1½↑		763
.15 CV bent	36"CV↑23, 2"/sec 26"x7"	46.4
.75 PAMPAS 1"x4", 6"/sec 11:00		168
.9 CEO 2"x6" 6"/sec		15.6
1.2 CC 6"x9" 6"/sec 11:04		34.4
1.3 Stirs ½CV		206
2.1 RR, 6"↑CV, 6"x34" 5sec/10'		40.0
2.35 36"CV, 11:17 5"x36' 5sec/10' ↑6"		51.6
2.56 (5) OVF deranged from CC		15.1
2.9 HILL 11:20 3'x8" 10/15sec 11:23 ↑10 36CV		37.5
4.3 Veg 11:29 11"↑ 4"CV PHOTOS NO DATA		6.10
4.7 4 PHOTOS 11:37 29↓36CV		
George Hacker Co. CV to be replaced, but not put down to grade? No record of CV cleaning Culvert leaks: bottom see photo		31.7
5.1 18"CV↑4" 11:51		14.2
5.5 12"x24 10/3sec PHOTOS 32↓48"CV		41.1
5.65 12:02 5"x23 4½sec 26↓30"CV PHOTO UP/DOWN INTACT Veg/Slide		31.4
5.8 Ridge/Landslide — E.D.A.		
6.0 48 CV↓39" 8"x25" PHOTO / WILLOWS		64.4

3.0

96.3 mi creek parallels road
20" down on 36" cut [42.8]

2.8

96.4 overland flow off mudbanks
below skid road

2.6

below C.C. with deranged hydrology
surface flow-not channel
- followed up to landing - photos
96.85 ~
6" x 40"

2.4

4,67 c/10'
creek by gated road
20" down on 36" cut [46.2]

97.15 mi. 2.1
Railroad
36" down, 4' cut
5" x 34"
4.58 sunk, 4.29/10, [67.2]
2.62 top = ~3.83/10

97.8 OVF very tiny creek
in small swale

97.9 SITE [46]
culvert 1/3
reduced by stick-log

98.3 small stream-off slide
9" x 2" ~ 6"/s
<.12> or [37.6]

98.5 pampas grass
6"/s
~~4"~~ 2" x 6"

creek thru swamp 98.7

98.7 road-gated
where loader was
Ditch at gate [24.9]

Mile 0 = 99.2 odometer

2/7

14:56

F@66 OVF (1) ½" x 8"
(2) 6" x 1" 3/4 ft

66.51↓ 15:01

* Photo of Log check
2/8/98 15:45
Plum 6.35 ft / 75'
1½" deep
30-34" wide

93.3 mi – last monitored stream
1.84 1.57 1.82 / 10' = ~1.74
3' wide * 10" deep
creek, 4' culvert

93.6
6" deep * 16" wide
3.03 2.91 2.74 / 10' = ~2.89
6" up on 30" culvert
creek

2/8/98

93.8
28" down on 48" culvert
24" wide * 14"
1.71, 1.96 / 10' = 184
creek

road climb ~ 30 m N on rd

94.2 cvt ~ 18", not monitored
<4.75> on sign

94.6 creek
27" down on 3' culvert
36" + 4" deep
+10" deep x 12" =
2.19 1.96 / 10' = ~2.08
<4.37> sign

94.95
14" down on 24" cvt
2 rd ditches + 2 threads of creek
1 thread N
4" x 20"
2.14 2.26 / 10" = ~2.21

16:39 main stand

2/6 Bull [redacted]

2.5 9"X36" 6'/3.40 sec [10.?]
↓R", 24" Culvert

2.56 12"X4" 3'/2 sec [18.?]
HAND DUG DITCH 4:42

2.7 SNARE 9"X2" 1'/sec [16.?]

2.9 COW ↓58" 6.2 sec [59.?]

3.1 10"X2" 1½'/sec [26.3]

3.14 1'X15" 3'/sec [16.6]

3.17 BU/3.2 sec. 12"X1' [16.9]

3.25 3½" in BU in 4.73 sec [24.?]

3.27 24"X4" 3'/2 sec 5:01 [8.17]

3.3 4 FLOWS/ Log root pipe
Calf ↓19" 7.22 sec [40.0]

5:37 PAMPAS 3 sec/BU
14"X1 1/2 sec [illegible]

CEONO 7"X2" 1/sec (24.6)

5:49 RR 9"X36"
(Below Black top)

2.35

5:54 56"X9" 3'/sec Black top

18 5'X10" 10'/3 sec (58.6)
↓
3.0 36"C?

4.3 24" CV
6:04 Forest ↓14" [10.8]

4.37 36" ↓26" [130]
6'/sec 4'W X6"

5.5 54"X12" 3'/sec/10' [147]
[illegible]

5.7 30" Culvert 20? [92.2]
8"X18" 5'/3 sec

5.? 4'X10" 5'/sec (152)
6.0 CC?

Mi 6 phone 6:43 >1000
1½X34

Stafford 19:00
7.5'X6"
12'/5 sec

2/6 Shively

2.5 OVF Cl Cut flat trench 45.4

2.58 OVF CC. one of 5 10:38 70.8
½ flow/BU/ 1.53 sec

Smaller ⅛ Flow 4.38 sec BU 45.6

2.8 OV CC Tractor Skid 36.9
thru flat/veg

2.8 Hill Flow 44.1

3.0 HM 9"X6' 1.43 sec/10' 10:53
13↓ 36" Cul 134

.5 Bate Gard 11:09 75.2

OMI ½ Flow/BU/1 sec 11:29 10.7
4"x18", 8"x15' 1¼ sec = 12 x 16?

TRIB1 7"x30 3.03/sec/10' 11:32 7.34
↓6", ~~24~~ cul

Cab 11:39 12"x10', 10'/2.11 sec 35.7

Ladder 11:42 2"x2" 92.0

~~Shop~~ 11:45 8" x ~~32~~" 15.0

Tub 11:48 10.4

Cow 11:51 57↓ 9 sec flow 767

Calf ↓16, 6.55 sec Thru ← Same as last minute

Bull @ above pond 97.7

12:05 after driving rain 30 minute
6"x3" cascade/with gravel

Seely 2:53 PM 185 NTU
122 after 10 M

after 15 minute 672
@ Philipsville >1000

2/6/98 16' warning stage is 27'
Bull SPRINKLERS ≅ 10.5x15

MILEO 22↓ 3x18', 7"x15 1½/sec 9.09

.3 4"x38 ~~2~~5'/.78 sec 3:43 6.45

.1 Tub 5½↓ 3:45 PM 6.67

.1 Cabin 26½↓ 27.5

1.3 7"x18' 2'/1 sec
1 sec/BU ↓12" 4:02 PM 8.32

1.6 Landslide 9.44 sec/BU 1"x4" 107

— RAIN —

1.8 26"x6' 3/sec 492

2.25 x 1'/1 sec 14.5

2.3 30"x7" 5'/.58 sec

INLET 5'↓ 24" Cul 4:18 22.9

2.35 OVF 18"x2" 2'/1.17 sec 11.1

2.36 OVF 6"BU in 5.09 sec
10"x3" 3'/1.82 sec 16.5

2.4 ↓7" 18" C / OVF's CL III 16"x5"/6'/2.75 sec STUMP 14.7

2/5 Shirley

5.5 7:00 PM 48" CW ↓22" >1000
10'X2' 5'/sec
5.7 2'X12" 3'/sec 7:09 PM 479
6.0 7:15 5'X9" 3'/sec 961
6.2 4'X1' 2'/sec 1021

Burl

Mile 0 8:05 PM 30" X 11" 2'/sec 10.1
3 8:10 PM 36"X3" 3'/sec 16.99
.31 8:18 30"X5" 3/sec 7.41
.7 Clvt 9'X12" 5'/sec ↓26" in 48" C 44.9
1.6 8:33 6"X1.5" 1'/sec 358
2.3 8:41 60"X7" 2.5/sec 53.7
2.9 8:45 14"X3" 2'/sec 16.6
Top 8.5" 34"X6" 3'/sec 26.6
2.5 8:54 8"X40" 2.5/sec 11.4
COW 55↓ 10'X24" ? 10'/sec >1000
6 Sec/ thru culvert
3.3 9:10 18"X5" 5'/sec 9.37
3.3 Root Pipe 8.04
Calf 11'X12" 5'/sec 130

48" 36"↓

2/6 AM

Mile 0 9:33 30" X 3.5 75'/3.2 sec
.1 4½" in Bucket / 6.95 sec 33.9
.5 Gate Gr. Rd 193
.5 ditch 8½" Bucket 5.3 Sec 188
from Clear cut 9:46 to 9:49
Quart Sample taken 3 minutes after Skidder passed flow on Rd surface 4" X ½" for 15' of surface
.65 1.63 Sec/10' 52"X9" 118
culvert ↓5" 9:54
.6 9:57 Rd surface 262
9:58 Ditch 360.7
.7 10:00 Full Bucket 2 Sec 9.44
12" X 3" 2'/sec
.75 ⅔ Flow / BU 3.0 Sec 10:10
.9 Creek 2 Sec / BU / ⅔ Flow 53.0
18" X 6" 1'/sec est
1.2 Little OV ⅔ flow / 2B / 2 Sec 9.02
1.2 Main ½ flow / 1BU / 3.5 Sec
20" X 2" X 1½ / Sec 17.8
SITE 10:20 Culvert 55% to 60%
1.4 ⅞ Flow 3.58 Sec / BU 13.8
2.1 RR 40" X 8" / 10' / 2.51 Sec > 1000
2.35 ↓19" / 36" 10:34 10" X 55" 2.73 Sec / 1B 15

2.6 Overland flows (5) Clement 34"x7" 5.5 sec [15.2]
3.0 Culvert 51"x8" 10'/2.6 sec [20.3]

HILL

4.1 30"x3" 5'/2 sec [10.7]
4.3 Culvert 2'x3" + 2 Rd ditches [7.72]
2:52 2'/sec ground covering
4.7 Culvert 4'x5" 6'/2 sec SUNNY [31.9]

5.5 Culvert Clement 5'x6" 2'/sec [27.6]
6-8 hours since Rain

2/4/98 No Rain

MILE 0 3:29 PM 2'/sec 25"x5" [7.5]
.3 40"x4" 3'/2 sec [11.43]
.31 6"x30" 2'/sec 3:44 [5.89]
.7 Culvert 8'x8" 15'/2.6 sec [17.6]
1.4 18"x4" 2'/sec [8.14]
1.6 Landslide 2"x2" 3:50 [47.2]
2.4 Overland 12"x2" 2'/sec [12.5]
2.8 Cow 15'x16" 2.3 sec/15' [55.3]
64↓ 8.57 sec thru culvert
3.6 Culv 9"x8" 20'/6.33 sec [34.5]
10.3 sec thru culvert ↓22 entrance
Bull @ 3.8 > [100]

2/5 3:30 8.55 sec [39.4] 116↓ [64" to rail]
HH 30" 17" 7"↓
12' 8" 3'

CL 3:30 4"↑ 9.67 sec/10' [50.8]
GG 60↓ 10'x6" 4.05 sec/10' [59.2]
F@GG 26↓ CULV 30" 20" 4.06 sec [32.6]
OVF 6' 9" 20'
½"x1" [14.1]
5 Friends MI 0 PM 2½x3 50'/sec
MI .1 5:44 3'x½ [44.9]
.35 2'x4" 1'/sec [44.7]
.5 Gate Rds Wire [62.0]
.55 4"/12" 7'/sec 5:53 [179]
.75 Landslide CEO 2"x14" 5'/2 sec [45]
.9 Slide/Pumps 18"x9, 1'/sec [112]
1.2 1) 6"x½ 5'/sec } CC 7.6
2) 20"x2" 5'/sec } 21.3
STE 6:10 Culvert 2/3 full c.c. [88]
2.4 36" CULVED ↓22 3'/sec [57.6]
2.5 Ditch 3'x4" 1'/sec 6:22 [91.5]
2.55 OVF 18"x4" 15'/sec [43.1]
2.9+ 36" CUL ↓14" 6:36
7'x6" 3'/sec
4.3 Four 24" Cul ↓12 [27.1]
4.5 Rd ditch below CC 1'x2' 1'/sec [56.8]

2/1/98 8:53 AM -79" Marshalville 24 hours

Jacoby 68½↓ 3" over bar 7.56 sec 50.6

HH 9:08 6.32 sec ↓108" 66.9

MC 9:15 ↓65,8↑ 4.36 sec 49.5

CL 9:48 ↑7" 6.98 sec/10' 60.8

GG ↓57" = 18" ↓ high mark
9" ↓ deep x 9', 2' x 5" deep
3.22 sec/16' Culvert (rock on rock) to
woodpecker 106

FGG ↓22" below culvert
2" 6.9 sec/12' 9" 6.98 sec/20' 22↓ 4.32 sec/20'
14' 10' 10'
↓16 8" → Backfill 60.4
3' → 1½"/sec 13'

Frost @ 66 overland flow from PL 135
10:32 road 200' away
1" x 1"

SUNNY Watches Noticed

SHIVELY MILL @ creek flow 12:21 >1000
6" redwood sapp 3 plugging culvert
2" deep 50'/sec, 30" wide

.15 overland flow ½" deep x 6" 1'/sec 60.4
4.12/10' 12:35 Highway gutter ½" x 20' 23.9
.4 12:42 Rd gutter 18" x 5", 10'/3.51 sec 24.1
12:47 Overland flow 5" x 12" 3'/4.5 sec 22.5
.5 12:51 Gate 1' x 3", 1'/sec clearcut 24.6
.55 12:58 Culvert 2.5 sec/10', 40" x 10' 27.0
.7 1:00 40" x 1", 4.3 sec/5' culvert 12' 8.57
.8 Landslide 1'/2 sec, 2" x 10" 21.8
1.0 Unstable/r 2" x 10", 3 ft/sec 9.38
1.2 Clear Cut 1" x 15" 10"/sec 11.4
STITZ culvert had been plugged
16' x 15", 25'/4.76 sec (had been 3' higher)
D.T. 3.05/sec/10', 4½" x 48"
1.02 sec/5' 3" x 22 fan shaped
1.45 1" x 4" 20' x 25' x 4' 7.44
2:05 2:05
1.5 1" x 12' 1'/sec 5.26
1.75 Gate Rd surface 50' 1" x ½" 25.5
2.1 RR Culvert ↓39" 289.1
6" x 44" x 2.7 sec/10'
2.3 18" x 1" 6"/sec 8.45
2:21 pm
Rain shower drizzle
2.4 11" x 30' 1.92 sec/ SUN 83.4

Ralph NF

1/24/96	12:00	349.5
1/25/98	13:00	27.2
1/26/98	12:10	138
1/26/98	20:00	>1000
1/27/98	11:30	148
1/28/98	12:45	98.3
1/29/98	12:30	299
1/30/98	13:00	86.2
1/31/98	10:30	50.2

Downloaded 1/31/98 at Garfield Road

50% dil 507, 517, 1/23/98 — /

A	1/25	14:30	48.4	rec low before rain
B	1/26	12:00	Creek rising	211
C	1/29	13:00	quite high	>1000
D	2/1	15:00	fairly High	>1000
E	2/2	22:00	Creek high, rain during	>1000
F	2/3	13:00	Creek down some	170

NC

1/26	10:9M	4'10" ↓	240
1/27	11:20	4'10 ↓	78.4
1/27	17:20	5'2" ↓	65.4
1/29	12:00	4'4" ↓	168
1/29	17:20	4'8" ↓	87.6

2/4/98 192CH Columbia with 200' cable

F@66 Bar is choked with pea gravel since last visit

66 outlet downstream is choked with sand

1/29 THUES [redacted] 1.15" McKyle rain

Jacoby 9:18 [163] ↓41" 8.52 sec

Heights 9:33 [227] ↓81 4.63 sec

MCR 9:40 AM [156] ↓48, 24↑ / 5.47 sec

Clong 9:54 [126] ↑11 3.2 sec 10 Feet

Park 10:00 [183] ↓123 3.15 sec / Bail

GG 10:06 [337] ↓2" 4.28 sec / 15' x 15"

The High water last week ↑8" GG

F@GG 20↓ bankfull 55' wide 6" deep above 10:13 [33] down 21" of the from peak water

11:55 Sample SC at Scotia / Shively rd

MILE 0.0 Concrete flume [>1000]

.5 Culvert (.5 SH) 2/3 full [204]

STITZ Culvert 1/3 full 12:05 STZ [795] [834] large sample

Torrent (T) 12:13 [394] & [420]

2.1 (RXR tracks) [87.1] 9" deep in 4' culvert

2.45 3' culvert 9" deep [37.8] (2.4)"

3.0 30" Culvert 8" [34.6] (3.0)

4.3 12:32 [8.4] unharvested area

Blue lines on trees NE 4 24

4.7 12:38 [94.0]

5.4 (5) Clearcut [110]

Mile 2.0 Mtn slope [10.9] 1/4 24" Culvert 1:10

.3 [4.23]

.33 [5.58] (17+85) (TRIB 1)?

.7 Culvert 4' dia. [26.7] 1:17 1/4 full

1.3 18" C 1/5 full [6.7] 1:20

1.6 overland flow / Landslide [5.5] 1 1/4" pipe

1.8 24" C 1/6 full [14.9] 1:24

2.3 2.5/sec 4" deep [15.4] (Trib 2) 30" wide

2.45 2" overland [10.9] 1:29

2.5 (Trib 3) 40" wide 7" deep 2.5 ft / 2 sec [10.2]

2.9 Cow 1:35 [124] 7' culv. 24" deep 8.7 sec / 42' Culvert

3.1 1:42 overland 2.5" deep [13.7]

3.15 12" culvert 2" deep [16.0]

3.2 1 1/2" (pipe) [22.2] 1:46

3.25 (16 9 +) 18' Culvert 1/4 [7.33]

12:21

3.3 1:50 12" wide / 2" deep [5.46]

3.3+ 1 1/2" log pipe [5.35]

3.3+ overland red needles [5.32]

3.3+ red needle 1/2" overland [5.54]

2:+ Cally 8' x 6" 20' / 5.51 sec [25.9]

2:01 Fuller Cully [>1000]

2:13 CFL (234) @ Dyerville Bar 445 vs 482

Standing in 30" water [>1000] [445 / 482] 1:1 dilution

Sat 2/21 Rain light 48°F 2" Nite before NO RAIN 8 AM

Jacoby 10:20 7.97 sec ↓8.5" [910]
HH 10:56 5.09 sec ↓11" [968]
HH 9:20 ↓13" [982]
MC 11:26 8.72 sec ↓13½ 8' wide [554]
20'/8.76 sec
CL 11:30 ↑25" 10'/1.35 sec [366]
Park 11:36 ↓93" 2.56 sec at white pipe/gully [747]
Graham 11:42 ↓33" [867]
TR 11:50 ↑24" 3.6 sec 3.34 sec/20' [676]
OVF 12:54 2"x9" 18"/.44 sec [>1000]
PHOTO BU-3"/1.22 BU 4¼/1.4 sec
Graham 13:09 20'/3.31 sec 27↓ deep 32↓ [>1000]
CL 13:21 26↑ 26" [illegible] from Con Seam of TR [288]
2ND 2BH (PHOTO)
HH ↓15 ↓17 paces #1 P @ 20" 10 P @ av 12" ↓
Flat [illegible] 8.87 sec/32'
HH 13:40 Bridge ↓22" 4.82 4.44 sec [514]
PHOTOS @ Higgin
Elk 14:33 floodplain PHOTOS [>1000]
Wolverton 12" x 6' 25" x 60"
STAGE 13"
SLOW 15.75 sec/20' EAST FLOW 4.08 sec/20'
17:04 >1000
16:32 >1000

2/21/98
Yager 17:36 42'/6.82 sec >1000
8:15 ↓111 5.22/sec bridge 17:48 [387]
Mi 9.17 ↓42 ↑17 5.44 sec TH [illegible] [293]
Grizzly Trib 4" x 14" 5'/1.22 sec [44.6]
Mi 16.24 Cascade 4" x 18" 18:21 [13.1]
9" BU/.75 sec
Mi 16.21 Cascade 30" x 3" 18:27 [18.0]
Mi 12.25 18:36 20" x 3½" [96.9]
12.10 8'/4.35 sec Second growth
12.10 4" x 18" 8'/3.47 sec [11.2]
16:45 Second growth timber
flat ground
2/21/98
Shively
.55 ↓7" 19:13 [38.6]
RR 21 36" x 7" ↓38"
8'/1.96 sec 19:21 [120]
Hill 21↓ [154]
Forrest 4 Mi ↓12" [19.2]
4.7 437 ↓27" 19:34 [66.5]
5.5 27↓ 19:39 [224]
6.0 ↓42", 6" (Bot Whitepipe) 6'/1.82 sec [426]
19:45 (Bottom of Whitepipe is ↓36"

#1

NOV 24

SF EIL 14:59 — 10'/4 sec fast, 10'/6 sec slow — 398 NTU 11/24 21:35 — 33' ← 5 fast → — 7'+ deep

5 = 8'10" from ⌊ — 8'10" ↓

NF 14:50 — ⌊ ⌋ ↓ 7'7" = 95 ↑ on stage gage — 739 NTU 11/24 21:41

7'7" is at bridge rail where Ralph Krause takes stage

NOV 24

OAR 11:15 AM — V = 7.50/THRU 7.03 — S = 2'4" — 3'11" = UNDER BRIDGE — 186 NTU 11/24 21:45 — DIS - every 8' all 6 in one bottle Larry Ford, Betta Moore

NOV 24 HH 19:05 — S = 99↓ = 13'7" (153") from guad rail = 120↓ at North pier — V = 7.22, 7.03 fast — DIS at RL and RR river right is fast and 6" deep — 109 NTU 11/24 21:43

11-24 CL 19:28 — 84.8 NTU 11/24 21:49 — DIS @ 2' 4' 6' 8' RR — V = 10'/6 sec, 6.5 sec, 5.2 sec — S = ↑7" = 3'7" ↓ concrete lip =

PARK 11/24 19:47 — DIS @ 3', 6' RR — V = 4.2, 5.0 — S = ↓133 deck top = ↓172 from rail — 90.2 NTU 11/24 @ 21:50

GG 11-24 20:01 — ↓32" from pipe (metal) = ↓56" on culvert edge — 156 NTU 11/24, 21:55 — V = 20'/5.1, 4.9, 5.2 sec — DIS @ 2' 4' 6' 8' 10' =

TR - NO STAGE — pipe ↓3'6" below brush on alder at Bogan will use transit later to determine @ STUMP gauge — 77.4 NTU 11/24 20:51

DIS @ 2' 4' 6' 8' RR — V = 7.5 sec RR @ 10' out [8 sec @ 5' out] 17 sec @ 1' out

NFC N Fk Elk 1/12/98 >1000 NTU

FF Freshwater @ Braham Gulch 973 NTU

I McReady 596 NTU

Mc McReady >1000 NTU

S3 Pasture, downstream Freshwater 133 NTU

estimate -
>1000 = >10,000 mg/l

JACOB 45 / 42' ⇔ 40' 89 (.025 time) 10.18 / 9.15 sec / 10.06

5/24/98

17:15 10' / 5.78 167 60 ft/sec 7" = 12"

17:20 ↓ 144 261 4.63 sec

17:25 ↓ 5.56" 992 3.37 - 3.56" 6" = 7"
3" = 9"

G. Gulch Low water 3' wide 7.76 sec 10 ft accuracy

17.32 156

I 5/22 1/2 - 3/4 50/50 Terry 9' 8.44 16" stage
10.91

Mc Ready 19.55 ↓ 60" 12" deep 201 5.54 sec.

N Fk 8.05 ↓ 109" 3/4 - 1/2 flat 241 - 5.91 / 6.40 / 6.2
(35-42-3) 43' wide 13' shw 10.12

10:10 Cleaning NF-3 [134 NTU]

Park, Freshwater
156.5" gate drain 10:15
9'10" = 118↓ to top of lower wooden strut

NF-2 [211 NTU]

Graham Gulch [G] [2~~44~~ NTU]
10 down 9" from last sp

Cluny road [603 NTU]
CL 606

road drg CL2 [~~841 NTU~~] >1000 NTU
~~9~~
6" * 24 cm * 9"/26

10:55

2 rills ~40 p * 4"x5" & ½ that, tapering to ~½ that

66 Road 11:08 gravel surg
9" x 2 m [93.3 NTU]

1 McReady [596]
2' McReady [271]

SF1 377

NFE N FK Elk 1/12/9[illegible] >1000 NTU

FF Freshwater @ Graham Gulch 973 NTU

l McReady 596 NTU

Mc McReady >1000 NTU

SF3 Pasture, downstream Freshwater
133 NTU

Estimate
>1000 = >10,000 mg/l

JACOBY 45 ⟷ 42' 40' | 89 | (2025 time) 10.18 / 9.15 sec / 10.06

5/24/98
17:15 10' .78 | 167 | 60" [illegible] 7" 2"

17:20 ↓ 1.14 | 261 | 4 [illegible]

17:25 ↓ [illegible] | 992 | 3.38–3.56" 6½ = 7"
3' = 9"

G. Gulch [illegible] water 3' wide [illegible] 10 ft [illegible]

| 156 |
[illegible] ½–3" 50/55 [illegible] 9' 8.24 10" stage
10.91

McReady 19.55 ↓60" 12" deep | 201 | 5.54/sec.

N. Lity 9.25 ↓ 109" 3/4–1/2 fast | 241 | –5.97/6.40/6.2
(135–4.3) 43' wide 13' slow 10.12