

12-8-2009

Ex. 279-US-431

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R2 Resource Consultants

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SY-5



"Rite in the Rain"
ALL-WEATHER
LEVEL BOOK
No. 310 F

1418.01

April 12, 2004

Survey

04/12/04

SI-5

Habitat Mapping & Site Setup

Crew: M. Gagner
M. Appy

	In	Out
Time	9:45	5:00 1:00
5.6	9:00	9:0

Equipment: Nikon Cool 500

Marsh MCBerry Model 2000
SN 2005068

Photo Log Directions: From Sargent R. Rd turn left onto Williamsen River Rd and follow for ~ 2.2 miles to Head of Run campground. Rd turns to gravel near head. Williamsen R. proceed straight and continue on gravel rd for ~ 1.1 miles to T intersection turn left onto Rd 27 and follow for ~ 1/2 miles to Sargent river crossing. Turn right just before bridge crossing & follow to camp area.

04/12/04

Habitat Mapping

Unit #	Type	Length	Width	Notes
1	riffle	106	35/40 30	min. 80% cover, 20 deep run
2	run	112	23	
3	riffle	65	30	
4	run	80 ¹⁰⁹	20	← Trib. enters
5	run	153	20	
6	scour pool	20	16	112 106
7	riffle	41	17	109 65
8	run	N 300	20	153 41
	End			106 172
				172 574

Habitat Composition

Length % Total
 Run - 674 sample
 Riffle - 212 sample
 Pool - 20 falls out
 Total 906 yards

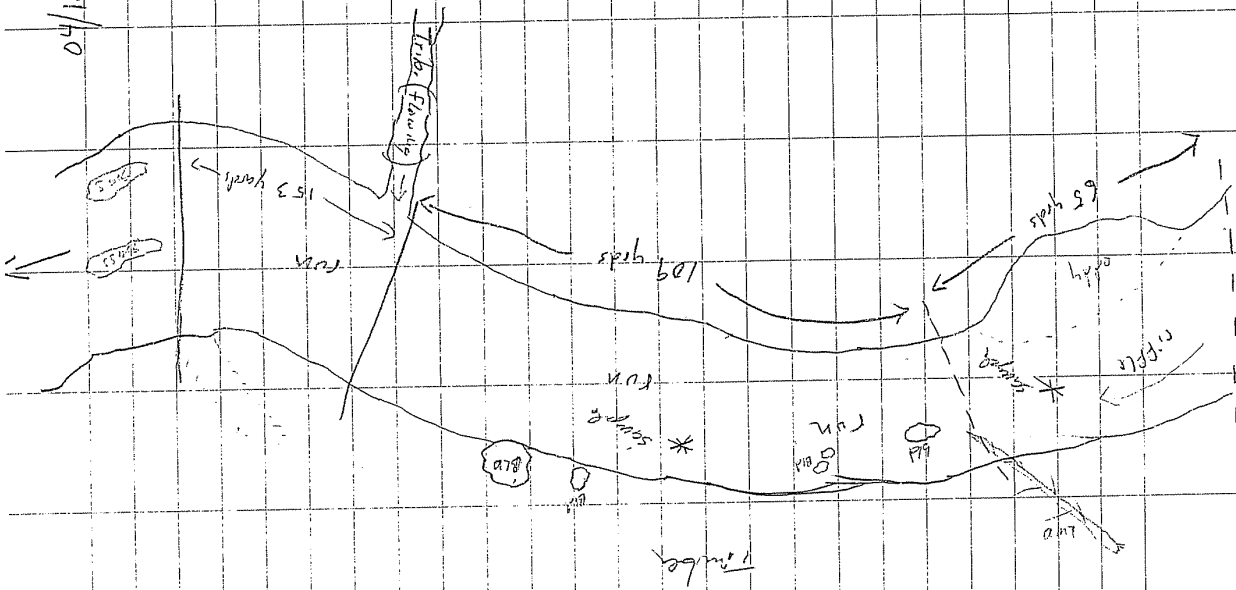
Random # for Unit Selection (measure stream start)

Run 3 (1106 x .3 = 331.8)

Riffle 42 (1106 x .37 = 409.2)

* selected new random # to keep with units
 % of trib. that enters from right bank (small/probably ephemeral)

04/12/04



04/12/04

SV-5

Habitat Map

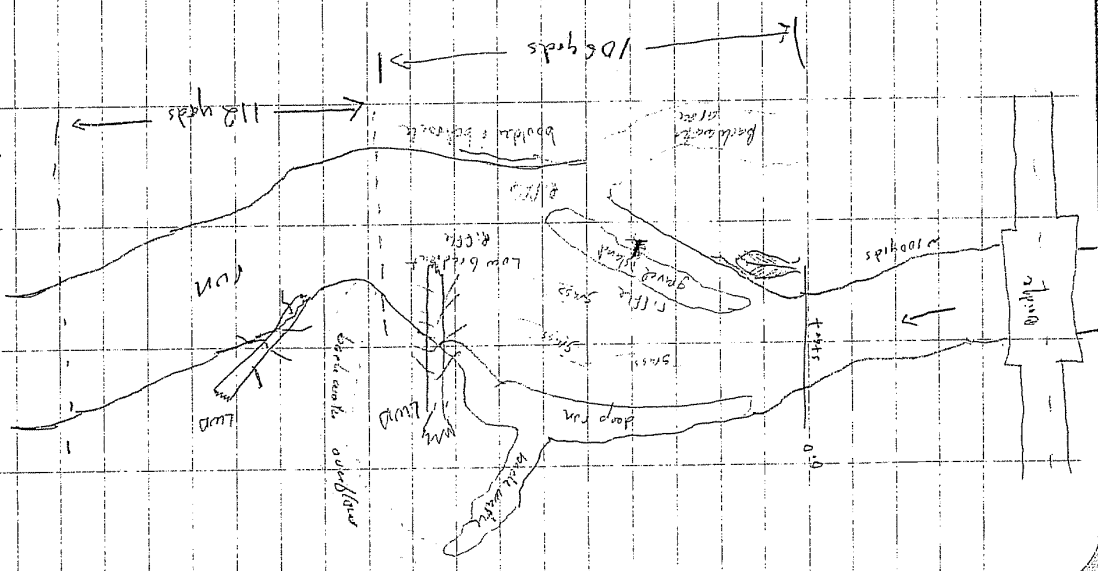
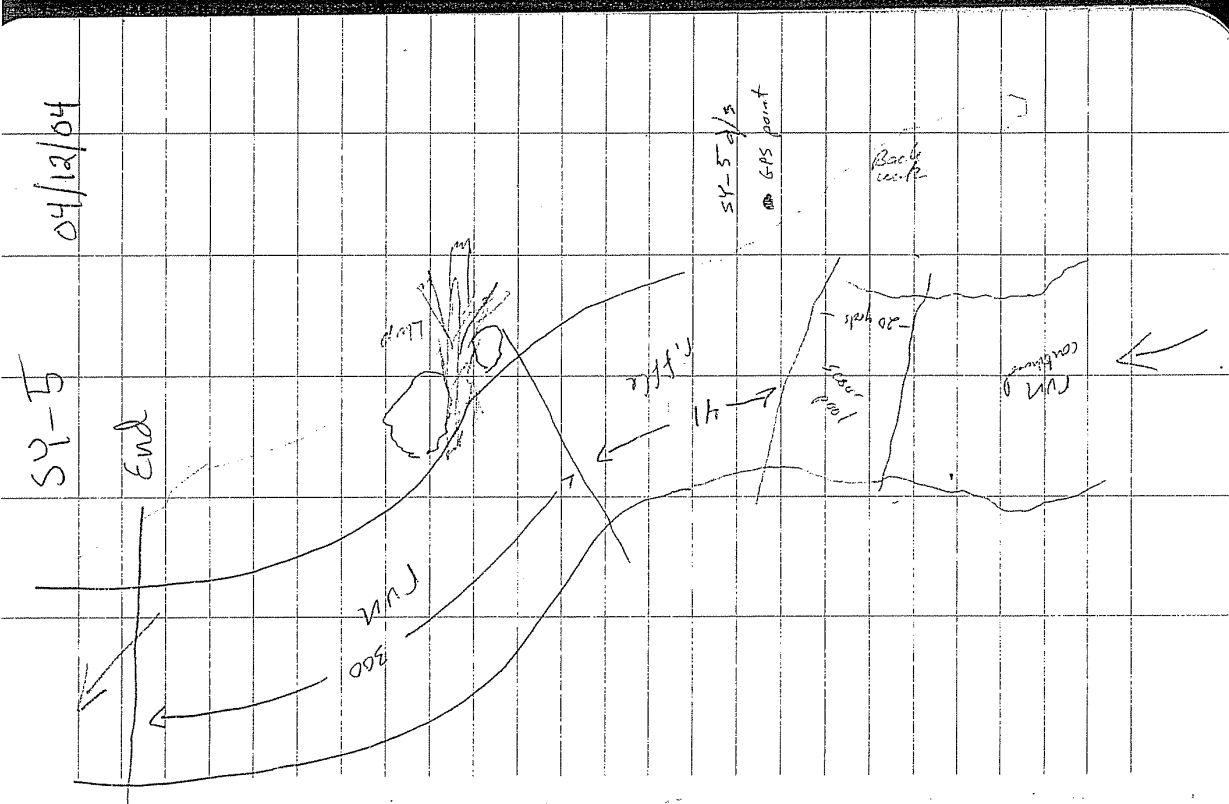


Photo #	Photo Log	SY-5	04/12/04
#9	Roll #4	SY-5	04/12/04
		<u>Description</u>	
#8		looking d/s from body of sand tree on right bank smaller stand of habitat nearby	
#7		looking d/s from end of unit #1	
#6		d/s from bottom of unit #2	
#5		d/s from bottom of unit #4	
#4		d/s from " of unit #4	
#3		d/s from last rifle	
#2		d/s " last rifle unit #7	
#1		" @ SY-5 back beach	
		d/s	
		Roll #5	
#25		TR-3 Rifle looking RT → LT	
#24		" " " " " "	
#23		TR-2 " " " "	
#22		TR-1 " " " "	
#21		looking d/s from bottom of rifle unit	
#20		looking d/s " top of cor unit	
#19		TR-3 looking RT → LT	
#18		TR-2 " " " "	
		TR-1 " " " "	



54-5 Row Unit 04/12/04

Unit Length = 109 yards

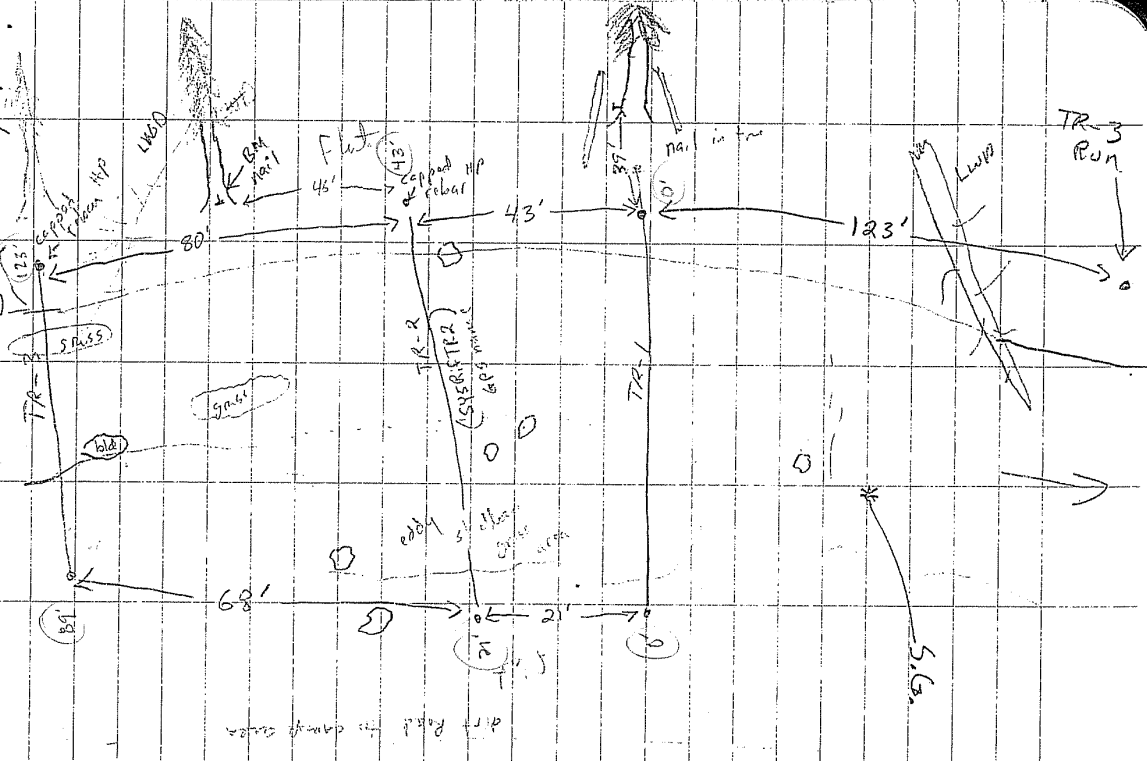
	(measured w/s. from w/s end of unit)	(unit front)
TR-3	$109 \times .2 = 21.8$ yds	66.0
TR-1	$109 \times .5 = 54.0$	162.0
TR-2	$109 \times .3 = 32.7$	98.0

Rifle Unit

Unit length = 65 yards

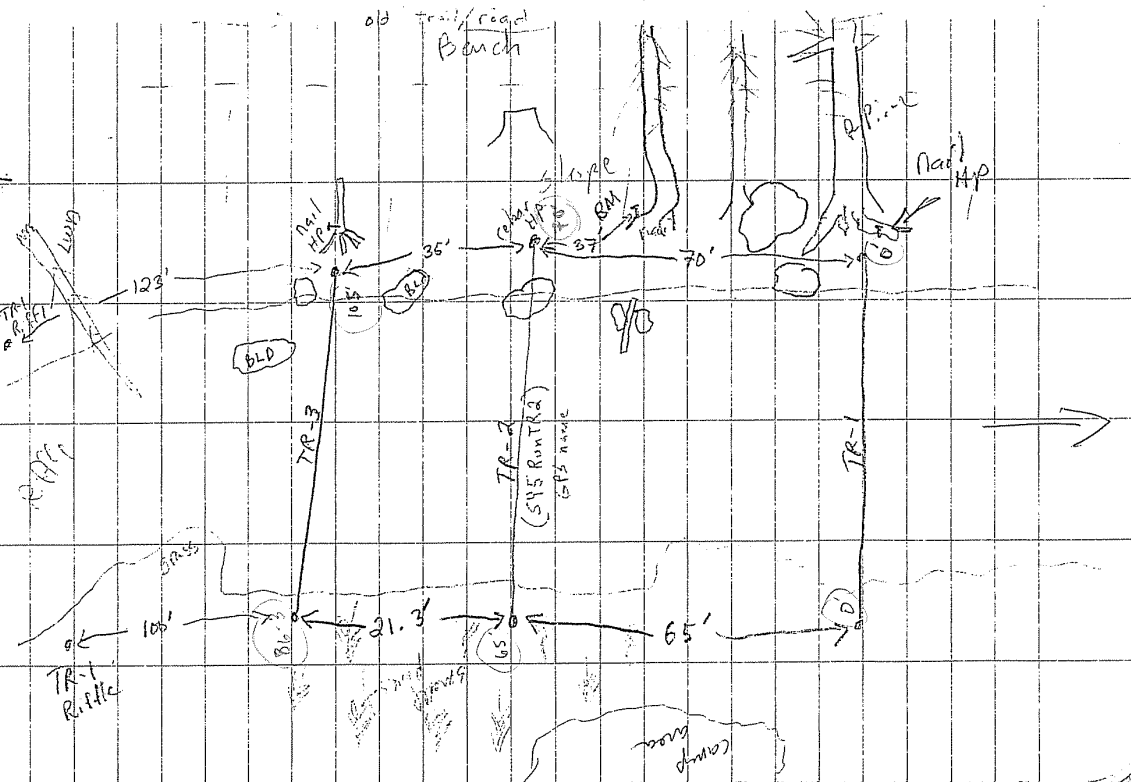
	(measured w/s. from w/s end of unit)
TR-2	$65 \times .5 = 33.0$
TR-1	$65 \times .7 = 45.5$
TR-3	$65 \times .1 = 6.5$

54-5 Rifle Unit 04/12/04



07/12/04

Run Habitat Unit Map



STA	R.FLU	Level	Loop	WSE	07/12/04
BM (cont)	2.59			100.00	
TR-3 HP (check)		102.59	3.57	99.02	
TR-2 HP (check)			3.43	99.16	
TR-1 HP (cont)			2.11	100.48	
TR-1 (TP)	2.22			100.48	
TR-2		102.70	3.54	99.16	
TR-3			3.69	99.01	
BM			2.70	100.00	
TR-3 LWS			6.77	96.52	0.59
RWS			6.31	96.58	0.19
TR-2 LWS			7.12	96.43	0.85
RWS			7.11	96.37	0.78
TR-1 LWS			6.60	96.32	0.22
RWS			7.31	96.36	0.97
TR-3 HP			3.94	98.76	

Run	Level	Loop	±	WSE	Eleva	Rad
STA	BS	HI	FS			
TR-3	2.82				98.76	04/12/04
TR-2		101.58	2.78	99.86		11/01/04
BM-			2.78	98.80		
TR-1			1.69	99.89		
TR-1	1.39			99.89		
BM		101.28	2.48	98.80		
TR-2			1.91	99.37		
TR-3			2.53	98.75		
TR-3	2.85			98.75		
TR-2		101.6	2.28	99.37		

STA	BS	HI	FS	Eleva	Rad
TR-3		101.60			
LWS			5.65	96.24	0.29
RWS			6.15	96.21	0.76
					0.55
TR-2					
LWS			5.71	96.21	0.32
RWS			6.53	96.19	1.12
TR-1					
LWS			6.02	96.15	0.57
RWS			8.78	96.14	3.32

54-5 Discharge 04/12/04
 Run WSE /
 STA Depth Vel. Notes

07/19/07

SY-5	Discharge	Notes
STA	Depth	Vel.
RWE		
99.0	0	0
96	.25	0
93	.45	.05
87	.35	.26
83	.4	.07
79	.55	.23
75	.8	1.07
71	.9	1.38
67	1.4	1.75
63	1.25	1.60
59	1.70	1.60
55	1.70	2.37
51	2.1	2.53
49	2.3	3.22
47	2.4	3.24
45	2.5	2.29 3.71
43	2.2	2.83
44	2.5	2.18 3.94
42	2.1	2.55
40	2.0	2.32
38	1.3	2.61
36	1.0	1.67
34	.6	2.15
31	.5	.89

4/12/07

SY-5	Discharge	Notes
STA	Depth	Vel.
28	.4	.23
25	.25	0
23.5	0	0

SY-5



"Rite in the Rain"
ALL-WEATHER
LEVEL BOOK
No. 310 F

6/25/04

SV-5 June 25, 2004

IN 9am
OUT 4pm
S.G. 0.8 / 0.78

CREW: C. Yoder, A. Neylought

Equipment: Marsh McBarney #2005068

Photo Log: CY ROLL #3

- 18 SYS Run TR1 RB to LB
- 17 SYS Run TR1 upstream
- 16 SYS Run TR1 downstream
- 15 SYS Run TR1 LB to RB
- 14 SYS Run TR1 upstream
- 13 SYS Run TR2 LB to RB. Note: Loaded at TR-1 RB to LB
- 12 SYS Run TR2 RB to LB
- 11 SYS Run TR3 RB to LB (No Board)
- 10 SYS Run TR3 LB to RB (No Board)
- 9 SYS near Riffle BM looking downstream
- 8 SYS Riffle TR1 RB to LB
- 7 SYS Riffle TR1 LB to RB
- 6 SYS Riffle TR2 LB to RB
- 5 SYS Riffle TR2 up looking upstream
- 4 SYS Riffle TR2 RB to LB

6/25/04

STA	RUN	LEVEL	HI	FS	ELV	ROD
BS		BS				
BM		3.82	102.62		98.80	
		3.75	102.55			
TR1				2.73	99.89	
TR2				3.24	99.38	
TR3				3.67	98.75	
TR1		3.7	102.52		98.75	
TR3		3.90	102.65		98.75	
TR2		3.28		3.28	99.37	
TR1		2.77			99.88	
BM			3.86		98.79	

Sta WP-5.5'

6/25/04

RUN TRI CROSS SECTION PROFILE

Sand, veg 60%

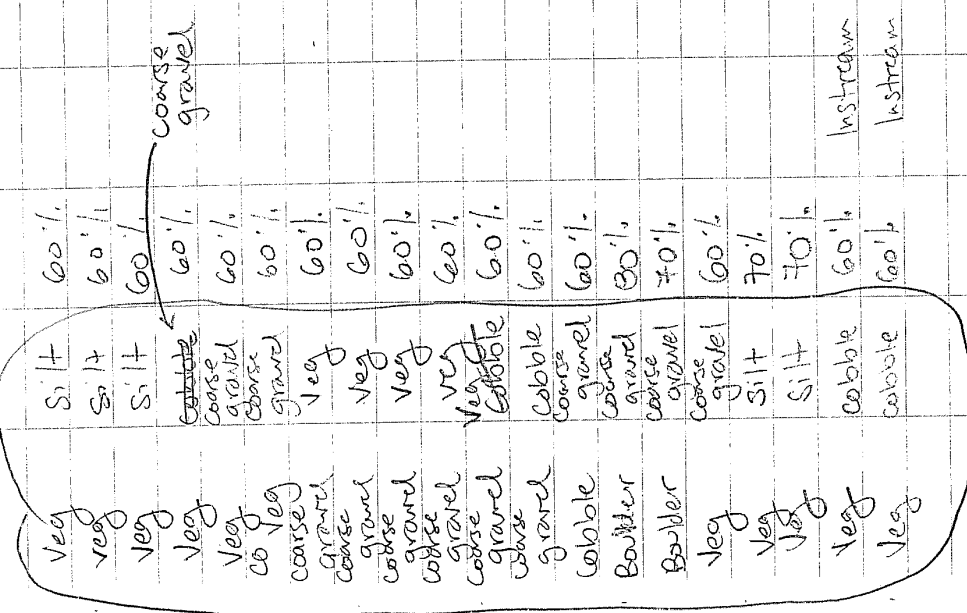
dominant/subdominant, % of dominant
 Comments

STA	BS	HI	FS	ELV	ROD	Substrate	Comments
93.9		102.65				veg, sand 60%	* estimated
77.6			4.70	97.95		cobble, sand 60%	
78.4		* can't	see rod	98.55		sand, veg 60%	Left working pin
71.9			6.47	96.18		veg, cobble, 70%	
69.5			6.87	95.78		veg 100% veg, cobble 60%	Left waters edge
68.6			7.56	95.09		veg, cobble 60%	TRI WSE Center
			7.59	95.06			TRI WSE Right
			7.58	95.07			Right waters edge
10.8			6.99	95.66		60% silt, veg	
16.8			6.73	95.92		60% silt, veg	
12.3			7.10	95.55		60% veg, silt	
9.2			6.62	96.03		60% veg, silt	
6.4			5.24	97.41		60% veg, silt	
1.0			3.72	98.93		60% veg, silt	
-5.0							Right working pin 1.0 HP - 6

SY-5 RUN TRI
DISCHARGE SURVEY 6/25/04

NOTE: Several fish spotted (primarily)

STA	DEPTH	BOT/TOP VELOCITY	COMMENTS	DOM	SUB	DOM %
18.8	0	0	RNE			
20.5	0.3	0	instream cover	veg	Silt	60%
23.0	0.92	0.04*	* estimated	veg	Silt	60%
25.5	2.08	0.04*	* estimated	veg	Silt	60%
28.0	2.52	0.02/0.05		veg	coarse gravel	60%
30.5	2.15	0.02		veg	coarse gravel	60%
33.0	2.5	0.02*/0.06	* estimated	co veg	coarse gravel	60%
35.5	2.42	0.07		coarse gravel	veg	60%
38.0	2.15	0.05		coarse gravel	veg	60%
40.5	2.35	0.12		coarse gravel	veg	60%
43.0	1.75	0.03		coarse gravel	veg	60%
45.5	1.95	0.11		coarse gravel	veg	60%
48.0	1.72	0.14		coarse gravel	veg	60%
50.5	2.20	0.32		coarse gravel	cobble	60%
53.0	1.45	0.20	on top of rock cover	cobble	coarse gravel	60%
55.77	2.12	0.22	instream cover	Boulder	coarse gravel	80%
58.0	1.9	0.1	instream cover	Boulder	coarse gravel	70%
60.5	1.55	0.05	instream cover	veg	Silt	70%
63.0	0.75	0.02*	* estimated	veg	Silt	70%
65.5	0.55	0.02*	behind boulder, * estimated	veg	cobble	60%
68.0	0.2	0		veg	cobble	60%
68.6	0	0	LWB	veg	coarse gravel	60%



of veg., which are eq. veg.

RUN TR2 CROSS SECTIONAL PROFILE

6/25/04

STA	BS	HI	FS	ELV	POD	DDM	SUB	%	COMMENTS
		102.65	5.19			Sand	Very	70%	WP - 10'
1.0			5.82	96.83		Very	Sand	70%	R working pin
4.8			6.28	96.37		Very	Sand silt	70%	
13.4			7.04	95.61		Very	silt	60%	waters edge
16.1			7.55	95.1		silt	Very	70%	WSEL - right
2 WSE			7.55	95.1					WSEL - center
6 WSE			7.54	95.11					waters edge
61.6			7.55	95.1		Very	silt	90%	waters edge
63.4			7.49	95.16		cobble	boulder	60%	
68.6			6.60			Boulder	Very	80%	
67.0			5.34	97.31		Boulder		100%	} Very Boulder
69.2			5.18	97.47		Boulder		100%	
69.5			6.01	96.64		Boulder	Very	80%	
73.2			5.60	97.05		Boulder	Very	60%	
77.7			4.01	98.64		Sand	Very	70%	L working pin
<u>77.7 + 6.1'</u>				<u>98.64 + 5'</u>					estimated

NOTE SHEETS ENERGY WITH C

STA	DEPTH	VELOCITY	DOM	SUB	%	Comments
59.5	1.22	0.02	boulder	veg	70	Com
60.5	0.65	0.03*	boulder	veg	60	* Est
61.6	0	0	veg	Silt	80	LWE

SN-S	TR-2	TR-2 SURVEY	DOM	SUB	%	Comments
16.1	0	0	Silt	veg	70	Com
17.5	0.28	0.01*	veg	Silt	60	* Est
20.0	0.28	0.02*	veg	Silt	60	
22.5	0.32	0.03*	veg	Silt	60	
25.0	0.7	0.01	veg	Silt	60	
27.5	1.33	0.07	veg	Silt	60	
30.0	1.62	0.01	veg	Silt	60	
32.5	2.5	0.04/0.16	cobble	veg	70	
35.0	2.28	0.07	cobble	veg	70	
37.5	2.4	0.12	coarse gravel	veg	70	
40.0	2.2	0.10	coarse gravel	cobble	70	behind boulder
41.0	2.02	0.05	boulder	sm. gravel	80	behind boulder
41.8	0	0				
42.0	0	0				
42.8	0	0				
44.1	2.17	0.03	boulder	coarse gravel	80	edge of boulder
46.0	2.35	0.25	cobble	coarse gravel	60	
48.0	2.18	0.03	cobble	coarse gravel	60	behind
49.0	2.05	0.03	boulder	cobble	70	veg
50.5	0.32	0.29	boulder		100	top of boulder
51.9	1.35	0.03	boulder	veg	80	
54.5	1.35	0.04	veg	Silt	70	behind Com
57.0	1.0	0.03	veg	Silt	70	

S/S RUN TR3

CROSS SECTIONAL PROFILE

STA	BS	HI	FS	ELV	ROD
-7.0		102.65	5.29	97.36	
1.0			5.68	96.97	
4.5			6.05	96.6	
9.4			6.70	95.95	
14.0			7.50	95.15	
B-10SE			7.51	95.14	
L-10SE			7.51	95.14	
71.5			7.50	95.15	
74.4			7.15	95.5	
76.0			6.44	96.21	
80.7			4.01	97.84	
80.7 + 9.8'				97.84 + 4'	

Down	SUB	%	COMMENTS
veg	Sand	70	blz slop MNP - B'
veg	Sand	70	RNP
veg	Sand	90	
veg	Silt	70	
Silt	veg	60	waters edge (R)
Silt	veg	60	waters edge (L)
Silt	veg	70	
veg	Silt	60	
veg	Sand	80	L working pic
boulder	veg	60	veg # Estimated

SY5 RUN TR3

DISCHARGE SURVEY

STA	DEPTH	VEL	DOM	SUB %	COM
14	0	0	Silt	veg 60	RME
16.5	0.27	0.03*	veg	silt 60	* EST
19.0	0.2	0.03*	veg	silt 60	
21.5	0.32	0.03	veg	silt 60	
24.0	0.45	0.03*	veg	silt 60	
26.5	0.52	0.02	veg	silt 60	
29.0	0.5	0.03*	veg	silt 60	
31.5	0.82	0.02*	veg	silt 60	
34.0	1.07	0.05	veg	silt 60	
36.5	1.1	0.02*	veg	silt 60	
39.0	0.9	0.03	veg	silt 60	
41.5	1.0	0.03	veg	silt 60	
44.0	1.5	0.06	veg	silt 60	
46.5	1.65	0.1	veg	silt 60	
49.0	1.9	0.04	coarse gravel	veg 70	
51.0	2.0	0.05*	coarse gravel	veg 70	vegetal boulder
53.0	2.03	0.05*	coarse gravel	veg 70	* EST. No Cover
55.0	2.07	0.44	coarse gravel	veg 70	vegetal boulder
57.0	2.07	0.23	coarse gravel	veg 70	No Cover
59.0	2.03	0	fine gravel	veg 60	No Cover
62.0	2.05	0.05	coarse gravel	veg 60	No Cover
64.5	2.08	0.01*	boulder	cobble 70	No Cover

CONTINUED

STA	DEPTH	VEL	DOM	SUB %	COM
65.1	2.2	0.01*	boulder	cobble 70	cover
65.5	0.75	0	boulder	100	cover
68.0	0.58	0	boulder	100	cover
70.5	0.35	0	veg	silt 60	cover
71.5	0	0	silt	veg 60	LWE

RIF FLE LEVEL LOOP 6/25/04

STA BS HI FS ELV END

BM 1,20 101.02 100.00

TR1 0.72 100.48

TR2 2.04 ~~99.16~~
~~99.96~~

TR3 2.17 99.03
~~99.83~~

(TP)

TR3 2.24 101.27
~~102.07~~

TR2 2.11 99.16

TR1 0.79 100.48

BM 1,26 100.01

RIPPLE TR I
 DISCHARGE SURVEY 6/25/04
 STA DEPTH VBL DOM SUB % COM
 158.6
 120.6

CONTINUED

STA	BS	HI	FS	ELV	DOM	SUB	%	COMMENTS
14.5		101.27	5.76	95.51	Si H	very fine sand	60	
11.5			5.55	95.72	Si H	fine sand	60-70	WP
1.0			4.14	97.13	sm. gravel	Sand	80	
-23			3.31	97.96	sm. gravel	sand	100	WP - 24'

6/25/04

RIFFLE TR I

STA	DEPTH	VEL	DOM	SUB	%	COM
78.0	0	0	veg	silt	70	RWE
77.5	0.3	0	silt	veg	60	
78.5	0.7	0.04	boulder	silt	60	
80.5	0.6	0.02	boulder	silt	70	inst. veg
81.0	1.25	0.06	silt	veg	60	
82.0	1.4	0.08	silt	veg	60	
83.0	1.52	0.05	silt	sm. gravel	60	
84.0	1.7	0.18	sm. gravel	sand	70	
85.0	1.7	0.69	sm. gravel	sand	70	No cover
86.0	1.7	1.52	sm. gravel	coarse gravel	60	No cover
87.0	1.58	1.20	sm. gravel	coarse gravel	60	No cover
88.0	1.7	1.07	sm. gravel	coarse gravel	60	No cover
89.0	1.65	0.22	sm. gravel	sand	60	No cover
90.0	1.47	0.13	sm. gravel	sand	60	inst. cover
91.0	1.4	0.03*	sm. gravel	sand	60	*est
92.0	1.12	0.03*	silt	veg	60	
93.5	0.95	0.5004	boulder	silt	80	
95.0	0.95	0.03*	silt	veg	60	*est.
96.5	0.62	0.03*	silt	veg	60	inst. cover
98.0	0.42	0.02*	silt	veg	60	
99.5	0.28	0	silt	veg	60	
101.0	0.28	0	silt	veg	60	
102.1	0	0	silt	veg	60	LWE
120.6						LMP

RIFFLE TR2 (Good Discharge)

STA	DEPTH	VEL	DOM	SUB	%	COM
61.2	0	0	silt	veg	60	RWE
63.5	0.2	0	silt	veg	60	↑
65.5	0.25	0	silt	veg	60	↓
67.5	0.12	0	silt	veg	60	↓
69.5	0.1	0	silt	veg	60	↓
71.5	0.2	0.02*	silt	veg	60	*Est.
73.5	0.3	0.03*	silt	veg	60	*Est.
75.5	0.2	0.02*	silt	veg	60	
77.5	0.37	0.03*	silt	veg	60	
79.5	0.53	0.03*	silt	veg	60	
81.5	0.70	0.04	silt	veg	60	
83.5	0.77	0.09	silt	veg	60	
85.5	0.75	0.05	silt	veg	60	
87.5	1.0	0.21	silt	veg	60	
88.5	1.6	0.09	sm. gravel	sand	60	
90.5	1.75	0.17	sm. gravel	sand	60	
92.5	1.83	0.36	sm. gravel	sand	60	No Cover
94.5	1.95	0.10	sm. gravel	sand	60	No Cover
96.5	2.00	0.08	sm. gravel	sand	60	Cover
98.5	2.03	0.09	sm. gravel	sand	60	Cover
100.5	1.92	0.1	sm. gravel	sand	60	Cover
102.5	1.85	0.09	sm. gravel	sand	60	No Cover
104.5	1.25	0.05	sm. gravel	sand	60	Cover
106.5	0.6	0.02*	silt	veg	70	Cover
107.5	0	0	veg	silt	70	Cover

PHOTO LOG (continued) 06/25/04

CY POLL 3

③ R/S/S Riffle TR3 RB to RB

② S/S Riffle TR3 downstream LB to RB

① S/S Riffle TR3 LB to RB

- cmk 72905
- ① unlikely to have abrupt terrain change
 - ② 5/7/05 survey shows no sudden bed change
 - ③ transect W's and W's of TR-2 don't have sudden change
 - ④ the change is exactly 10 foot
- Based on above 4 reasons, the change of adding 10 foot to the depths @ STA=96.5 and @ STA=98.5 are made.

RIPPLE TR3

CROSS SECTIONAL PROFILE 6/25/04

STA	BS	HI	FS	ELV	ROD
-19.0		101.27	2.7	98.57	
1.0			3.50	97.77	
14.0			3.96	97.31	
24.0			4.60	96.67	
36.0			5.10	96.17	
46.0			5.44	95.83	
57.0			5.29	95.98	
62.7	RWSE		5.82	95.45	
WSB middle			5.85	95.42	
81.0	LWSE		5.84	95.43	
85.5			5.40	95.87	
93.5			3.50	97.71	
98.0		5.56	5.77	95.5	
106.3		7/29/05	4.90	96.37	
112.6		photos of 6/25/04 & 5/7/05	2.64	98.63	
122.6		no abrupt terrain change. use FS= 5.56 to approximately match the bed profile surveyed on 5/7/05	2.30	96.98	

DOM	SUB	%	COMMENTS
Sm. gravel	Sand	60	estimated RWP - 20'
sm. gravel	coarse gravel	70	RWP
coarse gravel	sm. gravel	70	
coarse gravel	sm. gravel	70	
Cobbles	coarse gravel	60	
veg	Silt	70	
veg	Silt	70	RWE water's edge
Silt	veg	60	water
Silt	veg	70	LWE water's edge
veg	Silt	60	
veg	Silt	60	
Silt	veg	60	
veg	Silt	60	

ESTIMATED

5.56 to approximately match the bed profile surveyed on 5/7/05

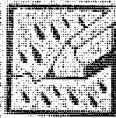
RIFLE TR 3

DISCHARGE SUEVEY

06/25/04

STA	DEPTH	VEL	DOM	SUB %	COM
62.7	0	0	silt	veg 60	RWE
63.0	0.2	0.03*	silt	veg 60	* Est.
64.0	0.32	0.04	silt	veg 60	
65.0	0.82	0.09	silt	veg 60	stream cover
66.0	0.78	0.18	silt veg	veg 60	
67.0	0.95	0.06	cobble	sm. gravel 60	
68.0	1.1	0.18	cobble	sm. gravel 60	
69.0	1.1	1.31	lg gravel	sm. gravel 60	No cover
70.0	0.98	1.1	lg gravel	sm. gravel 60	
71.0	1.0	1.39	lg gravel	sm. gravel 60	
72.0	1.15	0.7	lg gravel	sm. gravel 60	
73.0	1.15	1.19	lg gravel	cobble 60	2
74.0	1.2	0.53	lg gravel	sm. gravel 60	2
75.0	1.12	0.04	sm. gravel	lg gravel 60	2
76.0	1.2	0.23	cobble	sm. gravel 60	cover
77.0	1.05	0.06	cobble	sm. gravel 70	
78.0	0.85	0.03*	silt	cobble 70	* Est.
79.0	0.6	0.03*	silt	veg 60	stream cover
80.0	0.3	0.02	silt	veg 60	
81.0	0	0	silt	veg 70	LWE
118.6					LWP

SY-5



Right in the Rain
ALL-WEATHER
LEVEL BOOK
No. 310 F

SU-5

May 3, 05

In	Out
Time 9:00	3:00

Crew: McGeary
A. Weybright

Equipment: Nikon 316181
Marsh McBinary

puller VK2 # 3594C

Weather: clear & warm 55°F
no ppt. in past 24 hrs

photos: { #1 TR3 R→L #9 TR3 R→L
#2 TR3 look up #10 TR3 L→R
#3 TR3 L→R #11 TR2 L→L
#4 TR2 R→L #12 TR2 L→R
#5 TR2 L→R #13 TR1 R→L
#6 TR1 R→L #14 TR1 L→R
#7 TR1 L→R
#8 TR1 look N/S

SU-5	VK20	Level	Crop	05/03/05
		Riffle		
SXA	BS	HI	FS	Elevs
BM	2.55			100.00
		102.55		
TR-1		2.06		100.49
TR-2		3.39		99.16
TR-3		3.52		99.03
TR-3				
TR-2				
TR-1				
BM		2.55		100.00 ✓
TR-2		6.03		96.52
TR-2	LWS	6.06		96.49
TR-3	RWS	5.94		96.61 ^{SS} ↓
TR-3	R	5.88		96.67
TR-1	L	6.11		96.44
TR-1	R	6.12		96.43

54-5 R. Apple TR-3 25/03/05

STA	Depth	Vel	Substr	Cover	Notes
24.2	0.0	0.0	S.G.	S.G.	REW
26.0	0.2	0.10	S.G.	S.G.	
28.5	0.35	0.33	S.G.	S.G.	
31.0	0.05	0.0	S.G.	S.G.	
33.0	0.10	0.51	S.G.	S.G.	
36.0	0.5	1.36	S.G.	S.G.	ag. veg
40.0	0.6	1.66	S.G.	S.G.	ag. veg
45.0	0.8	1.21	S.G.	veg	ag. veg
50.0	0.85	1.52	S.G.	veg	
55.0	0.60	1.96	veg	st	
60.0	1.0	0.07	veg	st	
62.7	1.3	3.50			
63.0	1.7	3.36			
64.0	1.55	3.84			
65.0	2.05	3.96			
66.0	2.05	3.75			
67.0	2.20	3.65			
68.0	2.40	3.62			
69.0	2.25	3.91			
70.0	2.40	3.84			
71.0	2.40	3.74			
72.0	2.40	3.58			
73.0	2.45	3.38			
74.0	2.30	3.37			

17

STA	Depth	Vel	Substr	Cover	Comments
75.0	2.50	3.95 / 1.35			
76.0	2.50	3.97 / 1.71			
77.0	2.30	3.22			
78.0	2.10	2.66			
79.0	1.85	2.33			
80.0	1.60	2.41			
81.0	1.90	1.70			
83.0	1.05	0.68			
85.0	0.85	0.51			Flow @ 45
88.0	0.80	0.08			ag. veg
91.0	1.70	0.47			ag. veg
94.0	0.70	0.22			cover ag. veg
97.0	1.05	0.80			veg cover
100.0	0.98	0.26			veg cover
104.0	0.25	0.11			veg/object cover
106.8	0.0	0.0			LWE

Instrument:

Marsh Mc Birney

STA	Depth	Vel	Cover	Comments
84-5	Riffle	TR-2	05/03/05	
12.8	0.0	0.0		REW
16.0	0.2	0.01	veg	
20.0	0.3	0.01	veg	
25.0	0.4	0.01	veg	
30.0	0.4	0.01	veg	
40.0	0.55	0.01	veg	
45.0	0.80	0.06	veg	
50.0	0.70	0.08	veg	
55.0	0.95	0.04	veg	
60.0	1.05	0.22	veg	
61.2	1.10	0.18	veg	
63.5	1.30	0.26	veg	
65.5	1.35	0.30	veg	
67.5	1.25	0.161	veg	
69.5	1.40	0.71	veg	
71.5	1.38	0.48		
73.5	1.40	0.23		
75.5	1.40	0.15		
77.5	0.45	0.11		1.45 smh 7/27/05 unusually fast profile here such abrupt change
79.5	1.55	0.30		
81.5	1.70	0.61		
83.5	1.40	1.06		
85.5	1.85	1.42		

Sta	Depth	Vel	Cover	Comments
87.5	2.10	1.05		
88.5	0.70	1.79/1.80		
90.5	3.0	2.48/2.53		
92.5	3.15	3.27/2.21		
94.5	3.20	2.39/2.89		
96.5	3.20	3.72/2.44		
98.5	3.30	3.52/2.62		
100.5	3.30	3.58/2.33		
102.5	3.20	2.13/1.69		
104.5	2.60	2.25/0.93		
106.5	1.80	1.03		
107.5	1.10	0.79	veg	
109.0	0.75	0.04	veg	
112.0	0.40	0.05	veg	
115.0	0.50	0.01	veg	
118.0	0.45	2.01	veg	
121.2	0.0	0.0	veg	LEW

S4-5 Rifle TR-1 05/03/05

STA	Depth	VEL	Cover	Comments
7.0	0.0	0.0		REW
12.0	0.70	0.01		
17.0	1.00	0.01	veg	
22.0	0.90	0.01	veg	
25.5	0.60	0.01	veg	
31.0	1.17	0.01	veg	
37.0	1.37	0.01	veg	
42.0	0.90	0.13	veg	
45.0	0.90	0.92	veg	
49.0	1.40	0.58	veg	
52.0	1.00	0.52	veg	
57.0	1.40	0.80	veg	
62.0	1.15	0.68	veg	
67.0	1.30	1.31	veg	
71.0	1.20	0.87	veg	end veg 0.73
76.8	1.25	2.38	veg	
77.5	1.60	2.33		
78.5	1.75	2.31		
80.5	1.80	2.77		
81.0	2.50	2.76	1.91	
82.0	2.55	2.83	2.04	
83.0	2.80	3.18	2.34	
84.0	2.90	3.15	2.02	

✓

STA	DEPTH	VEL	COVER	COMMENTS
85.0	2.80	3.27 / 2.44		
86.0	3.00	3.47 / 2.95		
87.0	2.85	3.55 / 2.60		
88.0	3.00	3.93 / 2.48		
89.0	2.90	4.05 / 2.53		
90.0	2.70	3.92 / 1.67		
91.0	2.60	3.98 / 0.91		
92.0	2.40	2.27		
93.5	2.25	2.12	veg	
95.0	2.0	2.51	veg	
96.5	1.85	2.27	veg	
98.0	1.60	2.49	veg	
99.5	1.40	0.86	veg	
101.0	1.50	1.54	veg	
102.1	1.30	1.28	veg	
104.0	1.00	0.68	veg	
106.0	0.80	0.43	veg	
109.0	0.40	0.09	veg	
111.8	0.0	0.0	veg	UEW

ASY-5 RUN TR-3 05/03/05

STA	Depth	Vel	Color	Comments
6.8	0.0	0.0	v19	REW
9.0	0.3	0.01	veg	
12.0	0.7	0.01	veg	
14.0	1.2	0.20	veg	
16.5	1.45	0.34	veg	
19.0	1.40	0.56	veg	
21.5	1.50	0.89	veg	
24.0	1.65	1.14	veg	
26.5	1.70	1.45	veg	
29.0	1.70	1.51	veg	
31.5	2.0	1.74	veg	
34.0	2.30	1.83	veg	
36.5	2.40	2.23	veg	
39.0	2.15	2.28	veg	
41.5	2.20	2.07	veg	
44.0	2.70	2.72/0.91		
46.5	2.90	2.83/0.82		
49.0	3.10	3.12/1.03		
51.0	3.25	3.13/2.08 - 0.26 depth		Boulder affects 0.2 velocity
53.0	3.20	2.18/1.18		
55.0	3.15	2.41/2.01		object/veg over no d/s of veg bldw,
57.0	3.00	1.70/0.20		in back eddy
59.0	3.10	-0.06/-0.33		

✓ Run TR-3

Sta	Depth	Vel	Color	Comments
62.0	3.20	0.09/0.17		part adds from bldw v/s
64.5	3.30	1.18/0.79	0.4 veg	
65.1	3.40 3.25	1.47/0.01	object	
65.5	1.70	1.42		
68.0	2.10	0.97		
70.5	1.50	0.32	veg	
71.5	1.30	0.25	veg	
73.0	1.0	0.01	object/veg	
75.0	0.4	0.01		
76.1	0.0	0.0		

SY-5 RUN TR-2 05/03/05

Sta	Depth	Vel.	Cover	Comments
6.5	0.0	0.0		RWE f.c.
9.0	0.3	0.01	veg	
12.0	0.5	0.01	veg	
14.0	0.75	0.05	veg	
16.1	1.25	0.59		
17.5	1.45	0.70		
20.0	1.50	1.17		
22.5	1.55	1.33		
25.0	1.80	1.70		
27.5	2.50	1.87 / 0.90		
30.0	2.90	2.06 / 0.83		
32.5	3.75	2.17 / 1.82		
35.0	3.50	2.49 / 1.09		
37.5	3.60	2.67 / 0.69		
40.0	3.50	2.50 / 0.72		
41.0	3.20	1.78 / 0.01	Bldn	
41.8	1.10	0.84		Boulder
42.0	1.00	1.02		Bldn
42.6	1.20	2.19		Bldn
44.1	3.40	2.01 / 0.51	Bldn	
46.0	3.50	2.47 / 2.18		
48.0	3.40	2.59 / 1.59		
49.2	3.30	2.79 / 0.72		Edge Bldn

SY-5 RUN TR-2 05/03/05

Sta	Depth	Vel	Cover	Comments
50.5	1.55	2.31		top bldn
51.9	2.75	2.79 / 0.87		
54.5	2.50	1.08 / 1.37		
57.0	2.20	0.85	veg	
59.5	2.90	0.88	veg	
60.5	1.90	0.68	veg	
61.6	1.10	1.02	veg	
63.5	1.10	0.06	veg	
64.0	0.5	0.05	veg	
65.6	0.25	0.01	veg	
66.7	0.0	0.0		LWE - side of bldn

VKP ✓

TR-1 RUN

Sta	Depth	Vel	Cover	Comments
60.5	2.70	1.60 / 0.96		
63.0	2.40	0.89	veg	
65.5	2.20	1.2	veg	
68.0	1.50	0.04	veg	blt
68.6	1.15	0.09	veg	
70.0	0.38	0.02	veg	
72.0	0.0	0.0		LEW

Instrument

Micro-Measuring

SX-5 RUN TR-1 05/03/05

Sta.	Depth	Vel	Cover	Comments
5.5	0.0	0.00		RWE
8.0	0.5	0.01	veg	
11.0	0.6	0.01	veg	
13.0	0.3	0.01	veg	
16.0	0.5	0.01	veg	
18.0	1.0	-0.15	veg	
19.8	1.2	-0.15		
20.5	1.5	-0.06		
23.0	2.1	-0.24		
25.5	3.3	0.18 / 0.06		
28.0	3.7	0.36 / 0.36		
30.5	3.3	1.45 / 0.24		
33.0	3.6	1.99 / 0.59		On rock
35.5	3.6	2.06 / 0.58		
38.0	3.4	2.27 / 1.16		
40.5	3.0	2.64 / 1.53		
43.0	3.0	2.61 / 1.88		
45.5	3.2	2.38 / 1.41		
48.0	2.9	2.56 / 1.44		
50.5	3.4	2.44 / 1.27		
53.0	2.65	2.57 / 1.50		On rock
55.7	3.40	2.23 / 1.07		
58.0	3.0	1.69 / 0.75		

54-5	Rm	levelloop	KNOX 05/03/05
STA	ABS	HI	FS
BM	2.39		98.80
TR-3		10R, 19	2.43 98.76 ✓
TR-2		1.80	99.39
TR-1		1.30	99.89
TR-1	1.03		99.89
TR-2		100.92	1.53 99.39
TR-3		2.15	98.77 ✓
BM		2.11	98.81
TR-1 L		100.92	4.68 96.24
R		4.67	
TR-2 L		4.60	96.32
R		4.61	
TR-3 L		4.57	96.35
R		4.58	