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Ex. 280-US-479

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Stream: S.F. Sprague R. d/s Brownsworth  
 Site: 656  
 Date: 4/27/2007  
 Habitat: Cascade

Flow: High

(1) Level Loop Survey (BM & HP)		BS	HI	FS	Elev
BM/HP	(ft)	(ft)	(ft)	(ft)	(ft)
BM	7.86	107.86			100.00
HP-1			10.04		97.82
HP-2			8.88		98.98
HP-3			5.51		102.35
TP					
HP-3	5.78	108.13			98.98
HP-2			9.15		97.82
HP-1			10.31		100.00
BM			8.13		100.00

Comment: No level loop shoot

Date: 6/14/2007  
 Habitat: Cascade

Flow: Mid

(1) Level Loop Survey (BM & HP)		BS	HI	FS	Elev
BM/HP	(ft)	(ft)	(ft)	(ft)	(ft)
BM	8.70	108.70			100.00
HP-1			10.88		97.82
HP-2			9.72		98.98
HP-3			6.34		102.36
TP					
HP-3	6.49	108.85			98.98
HP-2			9.87		97.82
HP-1			11.03		100.00
BM			8.85		100.00

Comment: No level loop shoot

Date: 9/27/2007  
 Habitat: Cascade

Flow: Low

(1) Level Loop Survey (BM & HP)		BS	HI	FS	Elev
BM/HP	(ft)	(ft)	(ft)	(ft)	(ft)
BM					
HP-1					
HP-2					
HP-3					
TP					
HP-3					
HP-2					
HP-1					
BM					

Comment: No level loop shoot

(2) Water Surface Elevation (WSE) Survey

TR	River Station		Rod	FS	HI	Ave	WSE	Ave
	L/R bank	(ft)						
1-L	0		0.33	13.82	108.13	0	94.64	94.64
1-R			0.42	13.92	108.13	75	94.63	95.82
2-L	75		0.40	13.50	108.13	140	95.83	96.96
2-R			0.34	12.70	109.08		96.98	
3-L	140		0.45	12.44	12.60		96.93	
3-R				12.60				

Note: Discharge calculated from single riffle transects  
 WSE slope = 1.657%  
 Ave Q= 124.3

(2) Water Surface Elevation (WSE) Survey

TR	River Station		Rod	FS	HI	Ave	WSE	Ave
	L/R bank	(ft)						
1-L	0		0.88	9.80	102.98	0	94.06	94.07
1-M			0.93	9.82	102.98	75	94.09	38.4
1-R			0.48	9.39	106.99		94.07	
2-L	75		0.83	12.75	106.99	140	95.07	95.07
2-M			0.48	12.41	12.16		95.06	37.8
2-R			0.26	12.16	104.52		95.09	
3-L	140		0.13	8.13	104.52		96.52	96.47
3-R			0.19	8.30	104.52		96.41	34.8

Note: Discharge calculated from the average of 3 downstream Riffle TRs.  
 WSE slope = 1.708%  
 Ave Q= 37.0

(3) Meter and propeller ID for Velocity Correction

Meter ID: 4099  
 Propeller ID: 4A  
 Calibration: 175

(3) Meter and propeller ID for Velocity Correction

Meter ID: 4099  
 Propeller ID: 4A  
 Calibration: 175

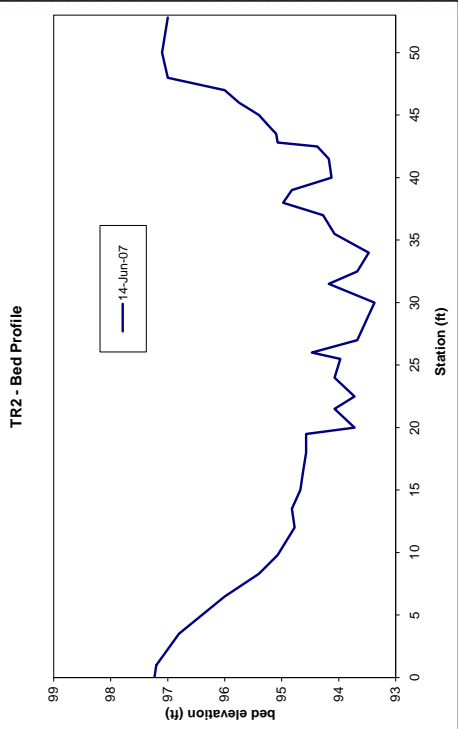
(3) Meter and propeller ID for Velocity Correction

Meter ID: 4441  
 Propeller ID: 7A  
 Calibration: 186

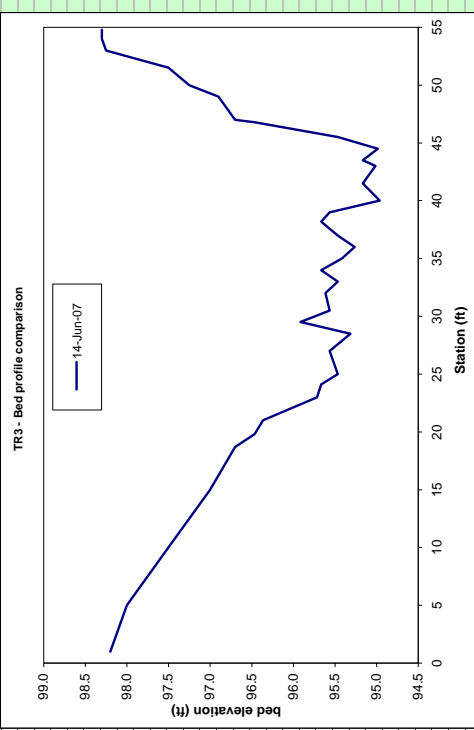


27-Apr-07										14-Jun-07										27-Sep-07															
Sta	FS	Ground	Depth	Vel (ft/s)	V <sub>0.8</sub>	NV <sub>0.8</sub>	NV <sub>0.2</sub>	Ave	Angle	q	substrate	Sta	FS	Ground	Depth	Vel (ft/s)	V <sub>0.8</sub>	NV <sub>0.8</sub>	NV <sub>0.2</sub>	Ave	Angle	q	substrate	Sta	FS	Ground	Depth	Vel (ft/s)	V <sub>0.8</sub>	NV <sub>0.8</sub>	NV <sub>0.2</sub>	Ave	Angle	q	substrate
2.0		97.30									1.2	2.0		97.30									1.2	2.0		97.30									1.2
3.5		97.20									1.2	3.5		97.20									1.2	3.5		97.20									1.2
6.5		96.80									3.1	6.5		96.80									3.1	6.5		96.80									3.1
8.3		95.40									6.3	8.3		95.40									6.3	8.3		95.40									6.3
9.8		95.07									6.7	9.8		95.07									6.7	9.8		95.07									6.7
12.0		94.77									6.7	12.0		94.77									6.7	12.0		94.77									6.7
13.5		94.82									6.7	13.5		94.82									6.7	13.5		94.82									6.7
15.0		94.67									6.7	15.0		94.67									6.7	15.0		94.67									6.7
16.5		94.62									6.7	16.5		94.62									6.7	16.5		94.62									6.7
18.0		94.57									6.7	18.0		94.57									6.7	18.0		94.57									6.7
19.5		94.57									6.7	19.5		94.57									6.7	19.5		94.57									6.7
20.0		93.72									6.7	20.0		93.72									6.7	20.0		93.72									6.7
21.5		94.07									6.7	21.5		94.07									6.7	21.5		94.07									6.7
22.5		93.72									6.7	22.5		93.72									6.7	22.5		93.72									6.7
24.0		94.07									6.7	24.0		94.07									6.7	24.0		94.07									6.7
25.5		93.97									6.7	25.5		93.97									6.7	25.5		93.97									6.7
26.0		94.47									6.7	26.0		94.47									6.7	26.0		94.47									6.7
27.0		93.67									6.7	27.0		93.67									6.7	27.0		93.67									6.7
29.0		93.47									6.7	29.0		93.47									6.7	29.0		93.47									6.7
30.0		93.37									6.7	30.0		93.37									6.7	30.0		93.37									6.7
31.5		94.17									6.7	31.5		94.17									6.7	31.5		94.17									6.7
32.5		93.67									6.7	32.5		93.67									6.7	32.5		93.67									6.7
34.0		93.47									6.7	34.0		93.47									6.7	34.0		93.47									6.7
35.5		94.07									6.7	35.5		94.07									6.7	35.5		94.07									6.7
37.0		94.27									6.7	37.0		94.27									6.7	37.0		94.27									6.7
38.0		94.97									6.7	38.0		94.97									6.7	38.0		94.97									6.7
39.0		94.82									6.7	39.0		94.82									6.7	39.0		94.82									6.7
40.0		94.12									6.7	40.0		94.12									6.7	40.0		94.12									6.7
41.5		94.17									6.7	41.5		94.17									6.7	41.5		94.17									6.7
42.5		94.37									6.7	42.5		94.37									6.7	42.5		94.37									6.7
LWE	42.8	95.07									6.7	LWE	42.8	95.07									6.7	LWE	42.8	95.07									6.7
43.5		95.10									6.4	43.5		95.10									6.4	43.5		95.10									6.4
44.0		95.20									2.1	44.0		95.20									2.1	44.0		95.20									2.1
45.0		95.40									1.2	45.0		95.40									1.2	45.0		95.40									1.2
46.0		95.75									1.2	46.0		95.75									1.2	46.0		95.75									1.2
47.0		96.00									1.2	47.0		96.00									1.2	47.0		96.00									1.2
48.0		97.00									1.2	48.0		97.00									1.2	48.0		97.00									1.2
50.0		97.10									1.2	50.0		97.10									1.2	50.0		97.10									1.2
LWP	52.8	97.00									1.2	LWP	52.8	97.00									1.2	LWP	52.8	97.00									1.2

**NOTE:** Bank profiles and substrates were scheduled to be collected during the low-flow survey on 9/27/07. However, due to the inclement weather that might endanger the field crew.



Stream: S.F. Sprague R.										27-Apr-07										14-Jun-07										27-Sep-07									
Site	Transsect	Habitat	Survey Date	Sta (ft)	FS (ft)	Ground (ft)	Depth (ft)	V <sub>0.8</sub>	NV <sub>0.8</sub>	NV <sub>0.8</sub> Ave	Angle (deg)	q (cfs)	substrate	Sta (ft)	FS (ft)	Ground (ft)	Depth (ft)	V <sub>0.8</sub>	NV <sub>0.8</sub>	NV <sub>0.8</sub> Ave	Angle (deg)	q (cfs)	substrate	Sta (ft)	FS (ft)	Ground (ft)	Depth (ft)	V <sub>0.8</sub>	NV <sub>0.8</sub>	NV <sub>0.8</sub> Ave	Angle (deg)	q (cfs)	substrate						
656	3	Cascade	4/27/2007	104.32	34.8																																		
			9/27/2007	104.09																																			
				1.0	98.20	98.47	0.00	0.00																															
				5.0	98.00	96.37	0.10	0.00																															
				10.0	97.50	95.72	0.75	0.00																															
				15.0	97.00	95.67	0.80	0.55																															
				18.7	96.70	95.47	1.00	1.33																															
				19.8	96.47	95.32	1.15	1.92																															
				21.0	96.37	95.92	0.55	2.02																															
				23.0	95.72	95.57	0.90	1.43																															
				24.1	95.67	95.62	0.85	1.86																															
				25.0	95.47	95.47	1.00	1.80																															
				27.0	95.57	95.47	1.00	1.80																															
				28.5	95.32	95.67	0.80	2.73																															
				29.5	95.92	95.42	1.05	3.34																															
				30.5	95.57	95.27	1.20	3.00																															
				32.0	95.62	95.47	1.00	1.80																															
				33.0	95.62	95.47	1.00	1.80																															
				34.0	95.67	95.47	1.00	1.80																															
				35.0	95.42	95.27	1.20	3.00																															
				36.0	95.27	95.47	1.00	2.60																															
				37.0	95.67	95.67	0.80	1.35																															
				38.2	95.67	95.57	0.90	1.36																															
				39.0	95.57	94.97	1.50	0.18																															
				40.0	94.97	95.17	1.30	0.25																															
				41.5	95.17	95.02	1.45	0.80																															
				43.0	95.02	95.17	1.30	0.90																															
				43.5	95.17	94.99	1.48	0.10																															
				44.5	94.99	95.47	1.00	0.05																															
				45.5	95.47	96.47	0.00	0.00																															
				46.8	96.47	96.70	0.00	0.00																															
				47.0	96.70	96.90	0.00	0.00																															
				49.0	96.90	97.25	0.00	0.00																															
				50.0	97.25	97.50	0.00	0.00																															
				51.5	97.50	98.25	0.00	0.00																															
				53.0	98.25	98.30	0.00	0.00																															
				54.0	98.30	98.30	0.00	0.00																															
				54.8	98.30																																		
				LWP																																			



**NOTE:** Bank profiles and substrates were scheduled to be collected during the low-flow survey on 9/27/07. However, due to the inclement weather that might endanger the field crew, those data were not surveyed at the time of site visit on that day. The bolded numbers are estimated from field visual survey, field notes, and site photos by MRG, who conducted the initial site reconnaissance, set up the site, performed habitat assessments, collected hydrologic data, and have checked the

CASCADE

MID

TRANSECT 1

IOC 1101100000001000101000

QARD 5.0  
 QARD 10.0  
 QARD 11.4  
 QARD 15.0  
 QARD 20.0  
 QARD 25.0  
 QARD 30.0  
 QARD 35.0  
 QARD 36.9  
 QARD 40.0  
 QARD 45.0  
 QARD 50.0  
 QARD 55.0  
 QARD 60.0  
 QARD 65.0  
 QARD 70.0  
 QARD 75.0  
 QARD 80.0  
 QARD 85.0  
 QARD 90.0  
 QARD 95.0  
 QARD 100.0  
 QARD 105.0  
 QARD 110.0  
 QARD 120.0  
 QARD 124.3  
 QARD 130.0  
 QARD 140.0  
 QARD 150.0  
 QARD 160.0

XSEC 0.0 0.00 1.0 92.80 0.01708  
 0.0 1.097.00 2.096.95 3.596.90 4.596.80 7.595.50 8.694.07  
 0.0 10.593.77 12.093.52 14.093.52 15.593.47 17.093.32 18.593.17  
 0.0 20.092.97 21.593.07 23.093.25 24.593.17 26.093.17 27.593.25  
 0.0 29.092.92 30.593.37 32.092.82 33.592.80 35.092.89 36.593.10  
 0.0 38.092.97 39.593.20 40.093.72 40.994.07 41.594.90 42.095.20  
 0.0 43.896.50 44.596.90 45.097.00 45.497.05

NS 0.0 1.2 1.2 1.2 1.5 5.6 6.7  
 NS 0.0 .15 6.7 .3 6.7 6.7 .18 6.7 .25 6.7 6.7  
 NS 0.0 6.7 .20 6.7 6.7 .20 6.7 6.7 .079 6.7  
 NS 0.0 6.7 6.7 6.7 6.7 6.7 6.7 .16 6.7  
 NS 0.0 6.7 6.7 .15 6.7 6.7 5.6 1.5  
 NS 0.0 1.2 1.2 1.2 1.2

CAL1 0.0 94.07 36.9  
 VEL1 0.0 0.00 0.38 0.23 1.16 0.60 0.38 1.70  
 VEL1 0.0 2.10 0.54 1.69 0.42 1.13 2.48 1.90 1.81 1.98 2.33 2.29 0.92  
 VEL1 0.0 1.37 1.19 0.21 0.00  
 CAL2 0.0 94.64 124.3

VEL2 0.0  
 VEL2 0.0  
 VEL2 0.0

CAL3 0.0 93.71 11.4  
 VEL3 0.0  
 VEL3 0.0  
 VEL3 0.0

ENDJ

CASCADE MID  
 IOC 1101100000001000101000

TRANSECT 2

QARD 5.0  
 QARD 10.0  
 QARD 11.4  
 QARD 15.0  
 QARD 20.0  
 QARD 25.0  
 QARD 30.0  
 QARD 35.0  
 QARD 36.9  
 QARD 40.0  
 QARD 45.0  
 QARD 50.0  
 QARD 55.0  
 QARD 60.0  
 QARD 65.0  
 QARD 70.0  
 QARD 75.0  
 QARD 80.0  
 QARD 85.0  
 QARD 90.0  
 QARD 95.0  
 QARD 100.0  
 QARD 105.0  
 QARD 110.0  
 QARD 120.0  
 QARD 124.3  
 QARD 130.0  
 QARD 140.0  
 QARD 150.0  
 QARD 160.0  
 XSEC 0.0 0.00 1.0 94.22 0.01708  
 0.0 -2.097.30 1.097.20 3.596.80 6.596.00 8.395.40 9.895.07  
 0.0 12.094.77 13.594.82 15.094.67 16.594.62 18.094.57 19.594.57  
 0.0 20.093.72 21.594.07 22.593.72 24.094.07 25.593.97 26.094.47  
 0.0 27.093.67 29.093.47 30.093.37 31.594.17 32.593.67 34.093.47  
 0.0 35.594.07 37.094.27 38.094.97 39.094.82 40.094.12 41.594.17  
 0.0 42.594.37 42.895.07 43.595.10 44.095.20 45.095.40 46.095.75  
 0.0 47.096.00 48.097.00 50.097.10 52.897.00  
 NS 0.0 1.2 1.2 1.2 3.1 6.3 6.7  
 NS 0.0 6.7 6.7 6.7 6.7 .4 6.7 .3 6.7  
 NS 0.0 .2 6.7 6.7 6.7 6.7 6.7 6.7  
 NS 0.0 .4 6.7 .4 6.7 6.7 6.7 6.7 6.7  
 NS 0.0 6.7 6.7 0.06 6.7 .05 6.7 6.7 6.7  
 NS 0.0 .08 6.7 6.7 6.4 2.1 1.2 1.2  
 NS 0.0 1.2 1.2 1.2 1.2  
 CAL1 0.0 95.07 36.9  
 VEL1 0.0 0.00 0.00 0.00 0.00 0.00 0.18 0.38  
 VEL1 0.0 0.45 1.45 2.11 2.05 0.93 0.68 0.23 0.22 1.54 1.40 1.57 2.76  
 VEL1 0.0 2.04 2.63 1.46 3.00 1.79 2.42 0.90 0.00  
 VEL1 0.0  
 CAL2 0.0 95.82 124.3  
 VEL2 0.0  
 VEL2 0.0  
 VEL2 0.0  
 VEL2 0.0  
 CAL3 0.0 94.69 11.4  
 VEL3 0.0  
 VEL3 0.0  
 VEL3 0.0  
 VEL3 0.0  
 ENDJ

CASCADE

MID

TRANSECT 3

IOC 1101100000001000101000

QARD 5.0  
 QARD 10.0  
 QARD 11.4  
 QARD 15.0  
 QARD 20.0  
 QARD 25.0  
 QARD 30.0  
 QARD 35.0  
 QARD 36.9  
 QARD 40.0  
 QARD 45.0  
 QARD 50.0  
 QARD 55.0  
 QARD 60.0  
 QARD 65.0  
 QARD 70.0  
 QARD 75.0  
 QARD 80.0  
 QARD 85.0  
 QARD 90.0  
 QARD 95.0  
 QARD 100.0  
 QARD 105.0  
 QARD 110.0  
 QARD 120.0  
 QARD 124.3  
 QARD 130.0  
 QARD 140.0  
 QARD 150.0  
 QARD 160.0

XSEC 0.0 0.00 1.0 95.32 0.01708  
 0.0 1.098.20 5.098.00 10.097.50 15.097.00 18.796.70 19.896.47  
 0.0 21.096.37 23.095.72 24.195.67 25.095.47 27.095.57 28.595.32  
 0.0 29.595.92 30.595.57 32.095.62 33.095.47 34.095.67 35.095.42  
 0.0 36.095.27 37.095.47 38.295.67 39.095.57 40.094.97 41.595.17  
 0.0 43.095.02 43.595.17 44.594.99 45.595.47 46.896.47 47.096.70  
 0.0 49.096.90 50.097.25 51.597.50 53.098.25 54.098.30 54.898.30  
 NS 0.0 1.2 1.2 1.2 3.1 6.3 .25 6.7  
 NS 0.0 .23 6.7 .22 6.7 .2 6.7 6.7 6.7 6.7  
 NS 0.0 6.7 .1 6.7 6.7 6.7 .075 6.7 .075 6.7  
 NS 0.0 6.7 6.7 6.7 6.7 .35 6.7 .30 6.7  
 NS 0.0 6.7 .15 6.7 0.3 6.7 0.3 6.7 6.7 6.4  
 NS 0.0 2.1 1.2 1.2 1.2 1.2 1.2 1.2  
 CAL1 0.0 96.47 36.9  
 VEL1 0.0 0.00 0.00 0.00 0.60 1.39 1.90 1.99  
 VEL1 0.0 2.09 1.49 1.93 1.87 2.80 3.41 3.07 2.67 1.41 1.42 0.28 0.34  
 VEL1 0.0 0.94 1.97 0.21 0.16 0.00  
 CAL2 0.0 96.96 124.3  
 VEL2 0.0  
 VEL2 0.0  
 VEL2 0.0  
 CAL3 0.0 96.15 11.4  
 VEL3 0.0  
 VEL3 0.0  
 VEL3 0.0  
 ENDJ



Stream: S.F. Sprague R. d/s E  
 Site: 656  
 Date: 4/27/2007  
 Habitat: Riffle Flow: High

Date: 6/14/2007  
 Habitat: Riffle Flow: Mid

Date: 9/27/2007  
 Habitat: Riffle Flow: Low

(1) Level Loop Survey (BM & HP)

BM/HP (ft)	BS (ft)	HI (ft)	FS (ft)	Elev (ft)
BM	5.14	105.14		100.00
HP-1			6.43	98.71
HP-2				
HP-3			6.17	98.97
TP				
HP-3	5.72	104.69		
HP-2				
HP-1			5.98	98.71
BM			4.70	99.99

Comment:

(1) Level Loop Survey (BM & HP)

BM/HP (ft)	BS (ft)	HI (ft)	FS (ft)	Elev (ft)
BM	4.48	104.48		100.00
HP-1			5.75	98.73
HP-2				
HP-3			5.50	98.98
TP				
HP-3	5.20	104.18		
HP-2				
HP-1			5.45	98.73
BM			4.18	100.00

Comment:

(1) Level Loop Survey (BM & HP)

BM/HP (ft)	BS (ft)	HI (ft)	FS (ft)	Elev (ft)
BM	5.34	105.34		100.00
HP-1			6.61	98.73
HP-2				
HP-3			6.35	98.99
TP				
HP-3	6.14	105.13		
HP-2				
HP-1			6.40	98.73
BM			5.13	100.00

Comment:

(2) Water Surface Elevation (WSE) Survey

TR	River Station		HI (ft)	FS (ft)	Rod (ft)	WSE (ft)	Ave WSE (ft)	Q (cfs)
	L/R bank (ft)	Ave (ft)						
1-L	0	0	104.69	11.46	1.02	94.25	94.24	124.3
1-R	0		10.84	0.38		94.23		
2-L	75	75	104.69	10.33	0.24	94.60	94.62	
2-R			10.85	0.80		94.64		
3-L	150	150	104.69	9.98	0.85	95.56	95.55	
3-R			9.67	0.52		95.54		

Ave Q= 124.3

Note: WSE slope = 0.873%

(2) Water Surface Elevation (WSE) Survey

TR	River Station		HI (ft)	FS (ft)	Rod (ft)	WSE (ft)	Ave WSE (ft)	Q (cfs)
	L/R bank (ft)	Ave (ft)						
1-L	0	0	101.56	8.55	0.88	93.89	93.92	38.7
1-M			10.84	0.38		93.95		
1-R			8.22	0.59		93.93		
2-L	75	75	102.10	8.67	0.67	94.10	94.10	37.7
2-M			8.80	0.80		94.10		
2-R			8.50	0.51		94.11		
3-L	150	150	104.79	10.18	0.48	95.09	95.05	34.0
3-M			10.44	0.68		95.03		
3-R			10.31	0.56		95.04		

Ave Q= 36.8

Note: WSE slope = 0.753%

(2) Water Surface Elevation (WSE) Survey

TR	River Station		HI (ft)	FS (ft)	Rod (ft)	WSE (ft)	Ave WSE (ft)	Q (cfs)
	L/R bank (ft)	Ave (ft)						
1-L	0	0	103.59	10.56	0.46	93.49	93.52	13.3
1-M			10.37	0.32		93.54		
1-R			10.53	0.47		93.53		
2-L	75	75	102.25	10.14	1.58	93.69	93.70	10.8
2-M			9.77	1.22		93.70		
2-R			8.96	0.42		93.71		
3-L	150	150.0	104.94	10.58	0.56	94.92	94.79	10.2
3-M			10.50	0.31		94.75		
3-R			10.60	0.36		94.70		

Ave Q= 11.4

Note: Natural drop in WSE from left to right bank at low flow. WSE slope = 0.847%

(3) Meter and propeller ID for Velocity Correction

Meter ID: 4099  
 Propeller ID: 4A  
 Calibration: 175

(3) Meter and propeller ID for Velocity Correction

Meter ID: 4099  
 Propeller ID: 4A  
 Calibration: 175

(3) Meter and propeller ID for Velocity Correction

Meter ID: 4441  
 Propeller ID: 7A  
 Calibration: 186

Stream: S.F. Sprague R. d/s E  
 Site: 656

Date: 4/27/2007  
 Habitat: Riffle

Flow: High

(1) Level Loop Survey (BM & HP)

BM/HP (ft)	BS (ft)	HI (ft)	FS (ft)	Elev (ft)
BM	5.14	105.14		100.00
HP-1			6.43	98.71
HP-2				
HP-3			6.17	98.97
TP				
HP-3	5.72	104.69		
HP-2				
HP-1			5.98	98.71
BM			4.70	99.99

Comment:

Date: 6/14/2007  
 Habitat: Riffle

Flow: Mid

(1) Level Loop Survey (BM & HP)

BM/HP (ft)	BS (ft)	HI (ft)	FS (ft)	Elev (ft)
BM	4.48	104.48		100.00
HP-1			5.75	98.73
HP-2				
HP-3			5.50	98.98
TP				
HP-3	5.20	104.18		
HP-2				
HP-1			5.45	98.73
BM			4.18	100.00

Comment:

Date: 9/27/2007  
 Habitat: Riffle

Flow: Low

(1) Level Loop Survey (BM & HP)

BM/HP (ft)	BS (ft)	HI (ft)	FS (ft)	Elev (ft)
BM	5.34	105.34		100.00
HP-1			6.61	98.73
HP-2				
HP-3			6.35	98.99
TP				
HP-3	6.14	105.13		
HP-2				
HP-1			6.40	98.73
BM			5.13	100.00

Comment:

(2) Water Surface Elevation (WSE) Survey

TR	River Station		HI (ft)	FS (ft)	Rod (ft)	WSE (ft)	Ave WSE (ft)	Q (cfs)
	L/R bank (ft)	Ave (ft)						
1-L	0	0	104.69	11.46	1.02	94.25	94.24	124.3
1-R	0	0	10.84	0.38	0.38	94.23	94.23	
2-L	75	75	104.69	10.33	0.24	94.60	94.62	
2-R			10.85	0.80	0.80	94.64	94.64	
3-L	150	150	104.69	9.98	0.85	95.56	95.55	
3-R			9.67	0.52	0.52	95.54	95.54	

Note: WSE slope = 0.873%

Ave Q= 124.3

(3) Meter and propeller ID for Velocity Correction

Meter ID: 4099  
 Propeller ID: 4A  
 Calibration: 175

(2) Water Surface Elevation (WSE) Survey

TR	River Station		HI (ft)	FS (ft)	Rod (ft)	WSE (ft)	Ave WSE (ft)	Q (cfs)
	L/R bank (ft)	Ave (ft)						
1-L	0	0	101.56	8.55	0.88	93.89	93.92	38.7
1-M			8.37	0.76	0.76	93.95	93.95	
1-R			8.22	0.59	0.59	93.93	93.93	
2-L	75	75	102.10	8.67	0.67	94.10	94.10	37.7
2-M			8.80	0.80	0.80	94.10	94.10	
2-R			8.50	0.51	0.51	94.11	94.11	
3-L	150	150	104.79	10.18	0.48	95.09	95.05	34.0
3-M			10.44	0.68	0.68	95.03	95.03	
3-R			10.31	0.56	0.56	95.04	95.04	

Note: WSE slope = 0.753%

Ave Q= 36.8

(3) Meter and propeller ID for Velocity Correction

Meter ID: 4099  
 Propeller ID: 4A  
 Calibration: 175

(2) Water Surface Elevation (WSE) Survey

TR	River Station		HI (ft)	FS (ft)	Rod (ft)	WSE (ft)	Ave WSE (ft)	Q (cfs)
	L/R bank (ft)	Ave (ft)						
1-L	0	0	103.59	10.56	0.46	93.49	93.52	13.3
1-M			10.37	0.32	0.32	93.54	93.54	
1-R			10.53	0.47	0.47	93.53	93.53	
2-L	75	75	102.25	10.14	1.58	93.69	93.70	10.8
2-M			9.77	1.22	1.22	93.70	93.70	
2-R			8.96	0.42	0.42	93.71	93.71	
3-L	150	150	104.94	10.58	0.56	94.92	94.79	10.2
3-M			10.50	0.31	0.31	94.75	94.75	
3-R			10.60	0.36	0.36	94.70	94.70	

Note: Natural drop in WSE from left to right bank at low flow. WSE slope = 0.847%

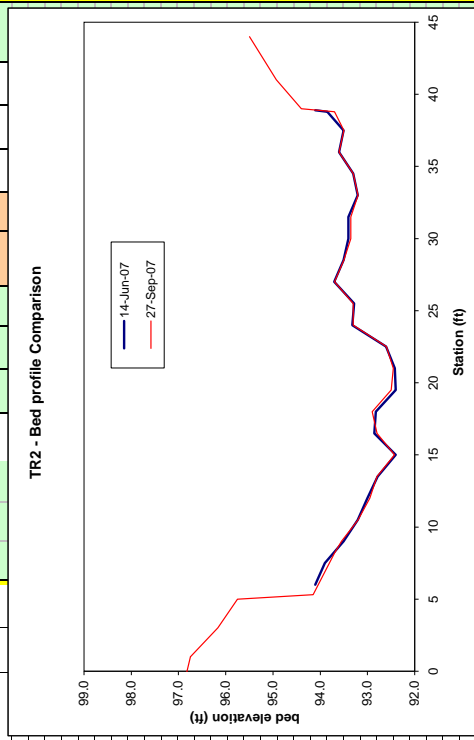
Ave Q= 11.4

(3) Meter and propeller ID for Velocity Correction

Meter ID: 4441  
 Propeller ID: 7A  
 Calibration: 186



Stream: S.F. Sprague R.										27-Sep-07										14-Jun-07										27-Apr-07												
Survey	Date	HI (ft)	Q (cfs)	FS (ft)	Ground (ft)	Depth (ft)	V <sub>20%</sub> (ft/s)	V <sub>5%</sub> (ft/s)	NV <sub>20%</sub> (ft/s)	NV <sub>5%</sub> (ft/s)	Angle (deg)	q (cfs)	substrate	FS (ft)	Ground (ft)	Depth (ft)	V <sub>20%</sub> (ft/s)	V <sub>5%</sub> (ft/s)	NV <sub>20%</sub> (ft/s)	NV <sub>5%</sub> (ft/s)	Angle (deg)	q (cfs)	substrate	FS (ft)	Ground (ft)	Depth (ft)	V <sub>20%</sub> (ft/s)	V <sub>5%</sub> (ft/s)	NV <sub>20%</sub> (ft/s)	NV <sub>5%</sub> (ft/s)	Angle (deg)	q (cfs)	substrate									
RWP	4/27/2007	104.69		7.0	4.92	97.33								7.0	4.92	97.33										7.0	4.92	97.33														
RWE	6/14/2007	102.10	37.7	3.0	6.08	96.75							1.2	3.0	6.08	96.75										3.0	6.08	96.75														
RWE	9/27/2007	102.25	10.8	5.3	8.10	94.15							2.4	5.3	8.10	94.15										5.3	8.10	94.15														
				9.0	93.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.0	93.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.0	93.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							
				10.5	93.20	0.90	0.23	0.33	0.33	0.44	0.44	2.6	2.6	10.5	93.20	0.90	0.23	0.33	0.33	0.44	0.44	2.6	2.6	10.5	93.20	0.90	0.23	0.33	0.33	0.44	0.44	2.6	2.6	10.5	93.20	0.90	0.23	0.33	0.33			
				12.0	92.78	1.10	0.24	0.34	0.34	0.34	0.55	6.2	6.2	12.0	92.78	1.10	0.24	0.34	0.34	0.34	0.55	6.2	6.2	12.0	92.78	1.10	0.24	0.34	0.34	0.34	0.55	6.2	6.2	12.0	92.78	1.10	0.24	0.34	0.34			
				13.5	92.78	1.32	0.26	0.35	0.35	0.68	0.68	7.3	7.3	13.5	92.78	1.32	0.26	0.35	0.35	0.68	0.68	7.3	7.3	13.5	92.78	1.32	0.26	0.35	0.35	0.68	0.68	7.3	7.3	13.5	92.78	1.32	0.26	0.35	0.35			
				15.0	92.40	1.70	0.71	0.76	0.76	1.95	1.95	7.4	7.4	15.0	92.40	1.70	0.71	0.76	0.76	1.95	1.95	7.4	7.4	15.0	92.40	1.70	0.71	0.76	0.76	1.95	1.95	7.4	7.4	15.0	92.40	1.70	0.71	0.76	0.76			
				16.5	92.85	1.25	1.41	1.47	1.47	2.75	2.75	6.7	6.7	16.5	92.85	1.25	1.41	1.47	1.47	2.75	2.75	6.7	6.7	16.5	92.85	1.25	1.41	1.47	1.47	2.75	2.75	6.7	6.7	16.5	92.85	1.25	1.41	1.47	1.47			
				18.0	92.82	1.28	2.23	2.30	2.30	3.42	3.42	6.5	6.5	18.0	92.82	1.28	2.23	2.30	2.30	3.42	3.42	6.5	6.5	18.0	92.82	1.28	2.23	2.30	2.30	3.42	3.42	6.5	6.5	18.0	92.82	1.28	2.23	2.30	2.30			
				19.5	92.40	1.70	1.79	1.86	1.86	3.47	3.47	6.5	6.5	19.5	92.40	1.70	1.79	1.86	1.86	3.47	3.47	6.5	6.5	19.5	92.40	1.70	1.79	1.86	1.86	3.47	3.47	6.5	6.5	19.5	92.40	1.70	1.79	1.86	1.86			
				21.0	92.42	1.68	2.14	2.21	2.21	3.41	3.41	6.5	6.5	21.0	92.42	1.68	2.14	2.21	2.21	3.41	3.41	6.5	6.5	21.0	92.42	1.68	2.14	2.21	2.21	3.41	3.41	6.5	6.5	21.0	92.42	1.68	2.14	2.21	2.21			
				22.5	92.60	1.50	2.40	2.47	2.47	5.56	5.56	6.5	6.5	22.5	92.60	1.50	2.40	2.47	2.47	5.56	5.56	6.5	6.5	22.5	92.60	1.50	2.40	2.47	2.47	5.56	5.56	6.5	6.5	22.5	92.60	1.50	2.40	2.47	2.47			
				24.0	93.32	0.78	0.88	0.93	0.93	1.09	1.09	7.6	7.6	24.0	93.32	0.78	0.88	0.93	0.93	1.09	1.09	7.6	7.6	24.0	93.32	0.78	0.88	0.93	0.93	1.09	1.09	7.6	7.6	24.0	93.32	0.78	0.88	0.93	0.93			
				25.5	93.28	0.82	1.99	2.06	2.06	2.53	2.53	7.6	7.6	25.5	93.28	0.82	1.99	2.06	2.06	2.53	2.53	7.6	7.6	25.5	93.28	0.82	1.99	2.06	2.06	2.53	2.53	7.6	7.6	25.5	93.28	0.82	1.99	2.06	2.06			
				27.0	93.70	0.40	2.12	2.19	2.19	2.19	1.31	7.6	7.6	27.0	93.70	0.40	2.12	2.19	2.19	2.19	1.31	7.6	7.6	27.0	93.70	0.40	2.12	2.19	2.19	2.19	1.31	7.6	7.6	27.0	93.70	0.40	2.12	2.19	2.19			
				28.5	93.50	0.60	1.77	1.84	1.84	1.65	7.5	7.5	28.5	93.50	0.60	1.77	1.84	1.84	1.65	7.5	7.5	28.5	93.50	0.60	1.77	1.84	1.84	1.65	7.5	7.5	28.5	93.50	0.60	1.77	1.84	1.84	1.65	7.5	7.5			
				30.0	93.10	0.70	1.74	1.80	1.80	1.90	1.90	7.5	7.5	30.0	93.10	0.70	1.74	1.80	1.80	1.90	1.90	7.5	7.5	30.0	93.10	0.70	1.74	1.80	1.80	1.90	1.90	7.5	7.5	30.0	93.10	0.70	1.74	1.80	1.80			
				31.5	93.10	0.70	1.78	1.85	1.85	1.85	1.91	7.5	7.5	31.5	93.10	0.70	1.78	1.85	1.85	1.85	1.85	1.91	7.5	7.5	31.5	93.10	0.70	1.78	1.85	1.85	1.85	1.85	1.91	7.5	7.5	31.5	93.10	0.70	1.78	1.85	1.85	
				33.0	93.20	0.90	2.00	2.07	2.07	2.07	2.79	5.0	5.0	33.0	93.20	0.90	2.00	2.07	2.07	2.07	2.07	2.79	5.0	5.0	33.0	93.20	0.90	2.00	2.07	2.07	2.07	2.07	2.07	2.79	5.0	5.0	33.0	93.20	0.90	2.00	2.07	2.07
				34.5	93.30	0.80	0.40	0.45	0.45	0.45	0.54	5.2	5.2	34.5	93.30	0.80	0.40	0.45	0.45	0.45	0.45	0.54	5.2	5.2	34.5	93.30	0.80	0.40	0.45	0.45	0.45	0.45	0.45	0.54	5.2	5.2	34.5	93.30	0.80	0.40	0.45	0.45
				36.0	93.60	0.50	0.03	0.10	0.10	0.10	0.07	2.5	2.5	36.0	93.60	0.50	0.03	0.10	0.10	0.10	0.10	0.07	2.5	2.5	36.0	93.60	0.50	0.03	0.10	0.10	0.10	0.10	0.07	2.5	2.5	36.0	93.60	0.50	0.03	0.10	0.10	
				37.5	93.50	0.60	0.68	0.73	0.73	0.73	0.62	2.4	2.4	37.5	93.50	0.60	0.68	0.73	0.73	0.73	0.73	0.62	2.4	2.4	37.5	93.50	0.60	0.68	0.73	0.73	0.73	0.73	0.62	2.4	2.4	37.5	93.50	0.60	0.68	0.73	0.73	
				38.8	93.85	0.25	0.00	0.00	0.00	0.00	0.00	2.1	2.1	38.8	93.85	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.1	2.1	38.8	93.85	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
				38.9	94.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.2	38.9	94.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.2	1.2	38.9	94.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
				44.0	41.0	7.32	94.95							44.0	41.0	7.32	94.95									44.0	41.0	7.32	94.95													
				44.0	6.75	95.50								44.0	6.75	95.50										44.0	6.75	95.50														





SF Sprague River SP16 09/27/07

RIFFLE	LOW							TRANSECT 1					
IOC	1101100100001000101000												
QARD	5.0												
QARD	10.0												
QARD	11.4												
QARD	15.0												
QARD	20.0												
QARD	25.0												
QARD	30.0												
QARD	35.0												
QARD	36.9												
QARD	40.0												
QARD	45.0												
QARD	50.0												
QARD	55.0												
QARD	60.0												
QARD	65.0												
QARD	70.0												
QARD	75.0												
QARD	80.0												
QARD	85.0												
QARD	90.0												
QARD	95.0												
QARD	100.0												
QARD	105.0												
QARD	110.0												
QARD	120.0												
QARD	124.3												
QARD	130.0												
QARD	140.0												
QARD	150.0												
QARD	160.0												
XSEC	0.0	0.00	1.0	92.79	0.00753								
	0.0	1.096.21	7.095.42	13.094.97	19.094.54	21.293.89	21.593.52						
	0.0	22.093.52	24.093.07	26.092.77	28.092.72	30.092.80	31.092.87						
	0.0	33.093.19	34.093.12	36.093.32	38.093.32	40.093.12	42.093.02						
	0.0	44.093.09	46.093.12	48.093.02	50.093.07	52.093.15	53.793.30						
	0.0	56.093.12	58.093.00	60.092.96	62.093.20	62.793.52	63.094.14						
	0.0	68.094.93	71.095.34	72.596.50	73.296.61								
NS	0.0	1.2	1.2	1.2	1.2	1.2	2.8						
NS	0.0	2.8	4.5	4.6	6.4	6.5	5.7						
NS	0.0	7.5	5.6	5.6	5.6	5.6	5.6						
NS	0.0	5.6	5.6	5.6	6.3	6.3	3.6						
NS	0.0	3.6	3.6	4.6	2.4	2.1	2.1						
NS	0.0	1.2	1.2	1.2	1.2								
WSL	0.0	93.36	93.49	93.52	93.61	93.71	93.80						
WSL	0.0	93.86	93.91	93.92	93.94	93.97	93.99						
WSL	0.0	94.02	94.04	94.06	94.08	94.10	94.12						
WSL	0.0	94.13	94.15	94.17	94.19	94.20	94.22						
WSL	0.0	94.25	94.26	94.28	94.31	94.33	94.36						
CAL1	0.0	93.52	11.4										
VEL1	0.0			0.00	0.00	0.21	0.18	0.27	1.25	1.20			
VEL1	0.0	1.35	1.34	0.68	1.03	0.99	1.03	0.07	1.55	1.07	0.85	0.47	0.52
VEL1	0.0	0.80	0.68	0.73	0.36	0.00							
CAL2	0.0	93.92	36.9										
VEL2	0.0												
VEL2	0.0												
VEL2	0.0												
CAL3	0.0	94.24	124.3										
VEL3	0.0												
VEL3	0.0												
VEL3	0.0												
ENDJ													

RIFFLE

MID

TRANSECT 1

IOC 1101100100001000101000

QARD 5.0  
 QARD 10.0  
 QARD 11.4  
 QARD 15.0  
 QARD 20.0  
 QARD 25.0  
 QARD 30.0  
 QARD 35.0  
 QARD 36.9  
 QARD 40.0  
 QARD 45.0  
 QARD 50.0  
 QARD 55.0  
 QARD 60.0  
 QARD 65.0  
 QARD 70.0  
 QARD 75.0  
 QARD 80.0  
 QARD 85.0  
 QARD 90.0  
 QARD 95.0  
 QARD 100.0  
 QARD 105.0  
 QARD 110.0  
 QARD 120.0  
 QARD 124.3  
 QARD 130.0  
 QARD 140.0  
 QARD 150.0  
 QARD 160.0

XSEC 0.0 0.00 1.0 92.79 0.00753  
 0.0 1.096.21 7.095.42 13.094.97 19.094.54 20.194.24 21.193.92  
 0.0 22.093.39 24.093.14 26.092.92 28.092.74 30.092.72 31.092.72  
 0.0 33.093.22 34.093.12 36.093.37 38.093.27 40.093.12 42.093.12  
 0.0 44.093.04 46.093.27 48.093.00 50.093.25 52.092.97 53.793.12  
 0.0 56.093.14 58.093.22 60.093.07 62.693.47 62.793.92 63.094.14  
 0.0 68.094.93 71.095.34 72.596.50 73.296.61  
 NS 0.0 1.2 1.2 1.2 1.2 1.2 1.2  
 NS 0.0 2.8 4.5 4.6 6.4 6.5 5.7  
 NS 0.0 7.5 5.6 5.6 5.6 5.6 5.6  
 NS 0.0 5.6 5.6 5.6 6.3 6.3 3.6  
 NS 0.0 3.6 3.6 4.6 2.4 2.1 2.1  
 NS 0.0 1.2 1.2 1.2 1.2  
 WSL 0.0 93.36 93.49 93.52 93.61 93.71 93.80  
 WSL 0.0 93.86 93.91 93.92 93.94 93.97 93.99  
 WSL 0.0 94.02 94.04 94.06 94.08 94.10 94.12  
 WSL 0.0 94.13 94.15 94.17 94.19 94.20 94.22  
 WSL 0.0 94.25 94.26 94.28 94.31 94.33 94.36  
 CAL1 0.0 93.92 36.9  
 VEL1 0.0 0.00 0.00 0.28 0.56 0.41 1.29 1.63 1.61  
 VEL1 0.0 1.89 1.71 1.07 1.62 1.91 2.10 0.36 2.58 1.52 0.96 0.32 0.57  
 VEL1 0.0 0.94 1.01 0.84 0.00 0.00  
 CAL2 0.0 94.24 124.3  
 VEL2 0.0  
 VEL2 0.0  
 VEL2 0.0  
 CAL3 0.0 93.52 11.4  
 VEL3 0.0  
 VEL3 0.0  
 VEL3 0.0  
 ENDJ

RIFFLE

HGH

TRANSECT 1

IOC 1101100100001000101000

QARD 5.0  
 QARD 10.0  
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 QARD 20.0  
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 QARD 90.0  
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 QARD 100.0  
 QARD 105.0  
 QARD 110.0  
 QARD 120.0  
 QARD 124.3  
 QARD 130.0  
 QARD 140.0  
 QARD 150.0  
 QARD 160.0

XSEC 0.0 0.00 1.0 92.79 0.00753  
 0.0 1.096.21 7.095.42 13.094.97 19.094.54 20.194.24 22.093.29  
 0.0 24.093.24 26.092.84 28.092.84 30.092.79 31.092.84 33.093.04  
 0.0 34.093.04 36.093.34 38.093.34 40.093.14 42.093.04 44.093.04  
 0.0 46.093.24 48.092.94 50.093.34 52.093.04 53.793.14 56.093.09  
 0.0 58.092.94 60.092.94 62.093.14 62.693.29 63.294.24 68.094.93  
 0.0 71.095.34 72.596.50 73.296.61  
 NS 0.0 1.2 1.2 1.2 1.2 1.2 2.8  
 NS 0.0 4.5 4.6 6.4 6.5 5.7 7.5  
 NS 0.0 5.6 5.6 5.6 5.6 5.6 5.6  
 NS 0.0 5.6 5.6 6.3 6.3 3.6 3.6  
 NS 0.0 3.6 4.6 2.4 2.1 2.1 1.2  
 NS 0.0 1.2 1.2 1.2  
 WSL 0.0 93.36 93.49 93.52 93.61 93.71 93.80  
 WSL 0.0 93.86 93.91 93.92 93.94 93.97 93.99  
 WSL 0.0 94.02 94.04 94.06 94.08 94.10 94.12  
 WSL 0.0 94.13 94.15 94.17 94.19 94.20 94.22  
 WSL 0.0 94.25 94.26 94.28 94.31 94.33 94.36  
 CAL1 0.0 94.24 124.3  
 VEL1 0.0 0.00 0.94 1.64 1.17 2.49 3.08 3.15 3.43  
 VEL1 0.0 3.07 2.87 2.62 2.66 3.21 0.73 4.25 3.44 3.84 0.34 3.70 3.59  
 VEL1 0.0 3.07 2.38 1.43 0.64 0.00  
 CAL2 0.0 93.92 36.9  
 VEL2 0.0  
 VEL2 0.0  
 VEL2 0.0  
 CAL3 0.0 93.52 11.4  
 VEL3 0.0  
 VEL3 0.0  
 VEL3 0.0  
 ENDJ



IOC 1101100000001000101000

QARD 5.0  
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 QARD 105.0  
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 QARD 124.3  
 QARD 130.0  
 QARD 140.0  
 QARD 150.0  
 QARD 160.0

XSEC 0.0 0.00 1.0 92.80 0.00753  
 0.0 -7.097.33 1.096.75 3.096.17 5.095.75 5.394.15 8.293.70  
 0.0 9.093.55 10.593.20 12.092.95 13.592.80 15.092.43 16.592.80  
 0.0 18.092.90 19.592.50 21.092.45 22.592.60 24.093.30 25.593.30  
 0.0 27.093.70 28.593.50 30.093.35 31.593.35 33.093.20 34.593.30  
 0.0 36.093.60 37.593.50 38.893.70 39.094.40 41.094.93 44.095.50  
 NS 0.0 1.2 1.2 1.2 1.2 1.2 2.4  
 NS 0.0 2.3 2.6 6.2 6.2 7.3 7.4  
 NS 0.0 6.7 6.5 6.5 6.5 7.6 7.6  
 NS 0.0 7.6 7.5 7.5 5.6 5.4 5.2  
 NS 0.0 2.5 2.4 2.1 1.2 1.2 1.2  
 CAL1 0.0 93.70 11.4  
 VEL1 0.0 0.00 0.00 0.43 0.30 0.57 0.23 1.39  
 VEL1 0.0 0.80 0.66 0.45 0.52 0.42 1.22 0.00 0.95 1.00 1.21 0.93 0.22  
 VEL1 0.0 0.00 0.00 0.00  
 CAL2 0.0 94.62 124.3  
 VEL2 0.0  
 VEL2 0.0  
 VEL2 0.0  
 CAL3 0.0 94.10 36.9  
 VEL3 0.0  
 VEL3 0.0  
 VEL3 0.0  
 ENDJ

IOC 1101100000001000101000

QARD 5.0  
 QARD 10.0  
 QARD 11.4  
 QARD 15.0  
 QARD 20.0  
 QARD 25.0  
 QARD 30.0  
 QARD 35.0  
 QARD 36.9  
 QARD 40.0  
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 QARD 55.0  
 QARD 60.0  
 QARD 65.0  
 QARD 70.0  
 QARD 75.0  
 QARD 80.0  
 QARD 85.0  
 QARD 90.0  
 QARD 95.0  
 QARD 100.0  
 QARD 105.0  
 QARD 110.0  
 QARD 120.0  
 QARD 124.3  
 QARD 130.0  
 QARD 140.0  
 QARD 150.0  
 QARD 160.0

XSEC 0.0 0.00 1.0 92.80 0.00753  
 0.0 -7.097.33 1.096.75 3.096.17 5.095.75 5.394.15 6.094.10  
 0.0 7.593.90 9.093.50 10.593.20 12.093.00 13.592.78 15.092.40  
 0.0 16.592.85 18.092.82 19.592.40 21.092.42 22.592.60 24.093.32  
 0.0 25.593.28 27.093.70 28.593.50 30.093.40 31.593.40 33.093.20  
 0.0 34.593.30 36.093.60 37.593.50 38.893.85 38.994.10 41.094.93  
 0.0 44.095.50

NS 0.0 1.2 1.2 1.2 1.2 1.2  
 NS 0.0 2.4 2.3 .20 2.6 .25 6.2 .25 6.2 7.3  
 NS 0.0 7.4 6.7 .11 6.5 .11 6.5 6.5 .09 7.6  
 NS 0.0 7.6 7.6 7.5 7.5 5.6 5.4  
 NS 0.0 .20 5.2 .25 2.5 2.4 2.1 1.2 1.2  
 NS 0.0 1.2

CAL1 0.0 94.10 36.9

VEL1 0.0 0.00 0.00 0.00 0.33 0.34 0.35 0.76

VEL1 0.0 1.47 2.30 1.36 1.35 2.47 0.93 2.06 2.19 1.84 1.80 1.85 2.07

VEL1 0.0 0.45 0.10 0.73 0.00 0.00

CAL2 0.0 94.62 124.3

VEL2 0.0

VEL2 0.0

VEL2 0.0

CAL3 0.0 93.70 11.4

VEL3 0.0

VEL3 0.0

VEL3 0.0

ENDJ

RIFFLE	LOW							TRANSECT 3
IOC	1101100000001000101000							
QARD	5.0							
QARD	10.0							
QARD	11.4							
QARD	15.0							
QARD	20.0							
QARD	25.0							
QARD	30.0							
QARD	35.0							
QARD	36.9							
QARD	40.0							
QARD	45.0							
QARD	50.0							
QARD	55.0							
QARD	60.0							
QARD	65.0							
QARD	70.0							
QARD	75.0							
QARD	80.0							
QARD	85.0							
QARD	90.0							
QARD	95.0							
QARD	100.0							
QARD	105.0							
QARD	110.0							
QARD	120.0							
QARD	124.3							
QARD	130.0							
QARD	140.0							
QARD	150.0							
QARD	160.0							
XSEC	0.0	0.00	1.0	94.45	0.00753			
	0.0	-6.098.76	1.098.31	6.097.56	6.796.60	10.095.88	15.095.06	
	0.0	20.295.01	20.894.79	21.594.39	22.094.14	24.093.99	26.094.49	
	0.0	28.094.74	30.094.59	32.094.54	34.094.49	36.094.34	38.094.49	
	0.0	40.094.54	42.094.74	44.094.54	46.094.59	48.094.39	50.094.69	
	0.0	52.094.49	54.094.49	56.094.44	58.094.79	59.094.79	59.895.24	
	0.0	60.395.58	62.095.99	66.496.45	70.497.52			
NS	0.0	1.2	1.2	1.2	1.2	1.2	1.2	
NS	0.0	1.2	1.2	2.4	2.4	4.2	4.2	
NS	0.0	4.5	5.4	5.6	5.6	5.6	5.6	
NS	0.0	5.6	5.6	6.5	6.5	5.6	5.6	
NS	0.0	5.6	5.6	6.4	6.2	1.2	1.2	
NS	0.0	1.2	1.2	1.2	1.2			
CAL1	0.0	94.79	11.4					
VEL1	0.0					0.00	0.00	0.00
VEL1	0.0	0.25	0.48	1.64	1.53	2.55	1.78	1.79
VEL1	0.0	0.58	1.06	1.09	0.00	0.00		
CAL2	0.0	95.55	124.3					
VEL2	0.0							
VEL2	0.0							
VEL2	0.0							
CAL3	0.0	95.05	36.9					
VEL3	0.0							
VEL3	0.0							
VEL3	0.0							
ENDJ								

RIFFLE

MID

TRANSECT 3

IOC 1101100000001000101000

QARD 5.0  
 QARD 10.0  
 QARD 11.4  
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 QARD 25.0  
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 QARD 65.0  
 QARD 70.0  
 QARD 75.0  
 QARD 80.0  
 QARD 85.0  
 QARD 90.0  
 QARD 95.0  
 QARD 100.0  
 QARD 105.0  
 QARD 110.0  
 QARD 120.0  
 QARD 124.3  
 QARD 130.0  
 QARD 140.0  
 QARD 150.0  
 QARD 160.0

XSEC 0.0 0.00 1.0 94.45 0.00753  
 0.0 -6.098.76 1.098.31 6.097.56 6.796.60 10.095.88 15.095.06  
 0.0 20.295.05 21.594.10 22.093.95 24.093.80 26.094.30 28.094.60  
 0.0 30.094.45 32.094.43 34.094.45 36.094.25 38.094.37 40.094.53  
 0.0 42.094.70 44.094.70 46.094.65 48.094.25 50.094.50 52.094.35  
 0.0 54.094.45 56.094.45 58.094.65 59.695.05 59.895.24 60.395.58  
 0.0 62.095.99 66.496.45 70.497.52

NS 0.0 1.2 1.2 1.2 1.2 1.2 1.2  
 NS 0.0 .1 1.2 .15 2.4 .15 2.4 .20 4.2 4.2 4.5  
 NS 0.0 5.4 5.6 5.6 5.6 .048 5.6 5.6  
 NS 0.0 5.6 6.5 6.5 5.6 5.6 5.6  
 NS 0.0 5.6 6.4 .07 6.2 .05 1.2 1.2 1.2  
 NS 0.0 1.2 1.2 1.2

CAL1 0.0 95.05 36.9

VEL1 0.0 0.00 0.46 0.57 0.26 0.93 1.08

VEL1 0.0 1.91 1.93 1.96 2.70 1.73 1.86 2.04 1.93 1.23 1.47 1.66 1.55

VEL1 0.0 1.50 1.26 1.08 0.00

CAL2 0.0 95.55 124.3

VEL2 0.0

VEL2 0.0

VEL2 0.0

CAL3 0.0 94.79 11.4

VEL3 0.0

VEL3 0.0

VEL3 0.0

ENDJ