

11-5-2008

Ex. 280-US-463

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Stream: NF Sprague River @FSB
 Site: 651 (Forest Service Boundary)
 Date: 6/2/1993
 Habitat: Cascade

Date: 7/1/1993
 Habitat: Cascade

Date: 9/16/1993
 Habitat: Cascade

Flow: High

Flow: Mid

Flow: Low

(1) Level Loop Survey (BM & HP)

BM/HP (ft)	BS (ft)	HI (ft)	FS (ft)	Elev (ft)
BM	6.08	106.08		100.00
HP3				
HP2			8.06	98.02
HP1			4.32	101.76
TP				
HP1	4.27	106.03		
HP2			8.01	98.02
HP3			5.23	100.80
BM			6.03	100.00

Comment:

(1) Level Loop Survey

BM/HP (ft)	BS (ft)	HI (ft)	FS (ft)	Elev (ft)
BM	12.93	112.93		100.00
HP3			12.13	100.80
HP2			14.89	98.04
HP1			11.18	101.75
TP				
HP1	12.47	114.22		
HP2			16.16	98.06
HP3			13.42	100.80
BM			14.21	100.01

Comment:

(1) Level Loop Survey

BM/HP (ft)	BS (ft)	HI (ft)	FS (ft)	Elev (ft)
BM	13.95	113.95		100.00
HP1			12.18	101.77
HP2			15.92	98.03
HP3			13.15	100.80
TP				
HP3	14.99	115.79		
HP2			17.74	98.05
HP1			14.02	101.77
BM			15.78	100.01

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	106.03	12.18	0.00	93.85	94.05	
1-R	0	0	11.78	11.78	0.00	94.25	94.25	
2-L	84	84	106.03	9.89	0.00	96.14	96.04	
2-R	84	84	10.09	10.09	0.00	95.94	95.94	
3-L	158	158	106.03	7.89	0.00	98.14	98.09	
3-R	158	158	8.00	8.00	0.00	98.03	98.03	

Note: No Q measured. See "data entry note" for estimated Q.
 WSE slope = 2.554%
 Ave Q = 360.0

(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	114.22	21.51	0.00	92.71	92.72	92.4
1-R	0	0	21.50	21.50	0.00	92.72	92.72	92.4
2-L	84	84	111.78	17.33	0.00	94.45	94.44	65.3
2-R	84	84	17.35	17.35	0.00	94.43	94.43	
3-L	158	158	110.86	14.01	0.00	96.85	96.80	86.8
3-R	158	158	14.12	14.12	0.00	96.74	96.74	

Note: WSE slope = 2.582%
 Ave Q = 81.5

(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	115.79	23.35	0.00	92.44	92.27	41.4
1-R	0	0	23.70	23.70	0.00	92.09	92.09	42.0
2-L	84	84	115.79	21.58	0.00	94.21	94.23	42.0
2-R	84	84	21.55	21.55	0.00	94.24	94.24	
3-L	158	158	115.79	19.33	0.00	96.46	96.47	41.0
3-R	158	158	19.31	19.31	0.00	96.48	96.48	

Note: WSE slope = 2.661%
 Ave Q = 41.5

(3) Meter and propeller ID for Velocity Correction

Meter ID: NA
 Propeller ID: NA

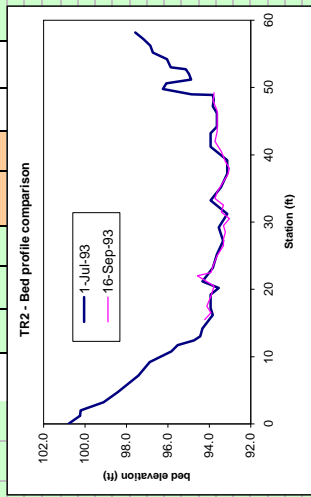
(3) Meter and propeller ID for Velocity Correction

Meter ID: NA
 Propeller ID: NA

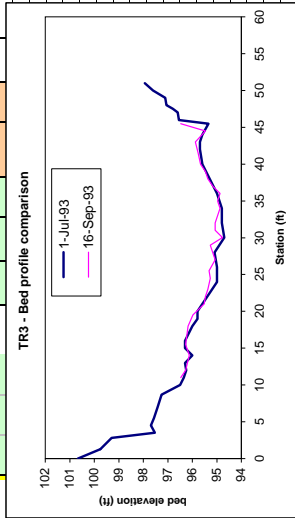
(3) Meter and propeller ID for Velocity Correction

Meter ID: NA
 Propeller ID: NA

2-Jun-93										1-Jul-93										16-Sep-93															
Sta (ft)	FS (ft)	Ground (ft)	Depth (ft)	Vel (ft/s)	V _{0.8} (ft/s)	NV _{0.8}	NV _{0.8} Ave	q (cfs)	substrate	Sta (ft)	FS (ft)	Ground (ft)	Depth (ft)	Vel (ft/s)	V _{0.8} (ft/s)	NV _{0.8}	NV _{0.8} Ave	q (cfs)	substrate	Sta (ft)	FS (ft)	Ground (ft)	Depth (ft)	Vel (ft/s)	V _{0.8} (ft/s)	NV _{0.8}	NV _{0.8} Ave	q (cfs)	substrate						
58.2																																			
RWP	0.0	58.2	14.20	97.58					9.9																										
	1.0	57.2	14.60	97.18					9.9																										
	2.0	56.2	14.93	96.85					9.9																										
	3.0	55.2	15.06	96.72					9.9																										
	4.0	54.2	15.73	96.05					9.9																										
	5.2	53.0	15.92	95.86					9.9																										
	5.5	52.7	16.65	95.13					9.9																										
	6.2	52.0	16.79	94.99					9.9																										
	7.0	51.2	16.90	94.88					9.9																										
	7.6	50.6	15.70	96.08					7.7																										
	8.2	49.0	16.91	94.87					7.7																										
REW	9.3	48.9	93.84						7.7																										
	10.0	48.2	93.79						6.6																										
	11.0	47.2	93.84						6.6																										
	12.0	46.2	93.64						6.6																										
	13.0	45.2	93.64						6.6																										
	14.0	44.2	93.64						6.6																										
	15.0	43.2	93.94						6.7																										
	17.0	41.2	93.94						6.7																										
	19.0	39.2	93.14						6.6																										
	21.0	37.2	93.14						6.6																										
	23.0	35.2	93.44						6.6																										
	25.0	33.2	93.94						6.6																										
	27.0	31.2	93.14						6.6																										
	29.0	29.2	93.54						6.6																										
	31.0	27.2	93.34						6.6																										
	33.0	25.2	93.64						6.6																										
	35.0	23.2	93.84						6.6																										
	37.0	21.2	94.34						6.6																										
	38.0	20.2	93.54						6.6																										
	39.0	19.2	93.94						6.6																										
	41.0	17.2	93.94						6.6																										
	42.0	16.2	93.84						6.6																										
	44.0	14.2	94.34						6.6																										
LEW	45.2	13.0	94.44						6.7																										
	45.8	12.4	177.03	94.75					9.7																										
	46.5	11.7	16.25	95.53					9.7																										
	47.4	10.8	15.94	95.84					9.7																										
	49.0	9.2	14.90	96.88					9.7																										
	51.0	7.2	14.35	97.43					9.7																										
	53.5	4.7	13.35	98.43					9.7																										
	55.0	3.2	12.67	99.11					9.7																										
	56.2	2.0	11.57	100.21					9.7																										
	57.0	1.2	11.53	100.25					9.7																										
LWP	58.2	0.0	10.97	100.81					9.7																										



Stream: NF Sprague Riv										2-Jun-93										1-Jul-93										16-Sep-93									
Site: 051										V _{0.8} [NV _{0.8}]										V _{0.8} [NV _{0.8}]										V _{0.8} [NV _{0.8}]									
Transect: 3										Depth (ft)										Depth (ft)										Depth (ft)									
Habitat: Cuckede										Sta (ft)										Sta (ft)										Sta (ft)									
										FS (ft)										FS (ft)										FS (ft)									
										Surf (ft)										Surf (ft)										Surf (ft)									
										adj (ft)										adj (ft)										adj (ft)									
										Sub (ft)										Sub (ft)										Sub (ft)									
										Vel (ft/s)										Vel (ft/s)										Vel (ft/s)									
										q (cfs)										q (cfs)										q (cfs)									
										substrate										substrate										substrate									
Survey HI Q																																							
Date (ft) (cfs)																																							
6/7/1993 106.03																																							
7/1/1993 110.86 86.8																																							
9/16/1993 115.79 41.0																																							
RWP										0.0	51.0	12.92	97.94	0.0	51.0	12.92	97.94	0.0	51.0	12.92	97.94	0.0	51.0	12.92	97.94														
REW										3.0	48.0	13.80	97.06	3.0	48.0	13.80	97.06	3.0	48.0	13.80	97.06	3.0	48.0	13.80	97.06														
LWP										51.0	0.0	10.19	100.67	51.0	0.0	10.19	100.67	51.0	0.0	10.19	100.67	51.0	0.0	10.19	100.67														



```

CASCADE                MID                TRANSECT 1
IOC          1101100000001000101000
QARD  10.0
QARD  20.0
QARD  30.0
QARD  41.5
QARD  50.0
QARD  60.0
QARD  70.0
QARD  81.5
QARD  90.0
QARD 100.0
QARD 110.0
QARD 120.0
QARD 130.0
QARD 140.0
QARD 150.0
QARD 160.0
QARD 170.0
QARD 180.0
QARD 190.0
QARD 200.0
QARD 210.0
QARD 220.0
QARD 230.0
QARD 240.0
QARD 260.0
QARD 280.0
QARD 300.0
QARD 320.0
QARD 340.0
QARD 360.0
XSEC1000.0      0.00 1.0      90.72  0.0258
1000.0  0.097.51  1.996.57  3.396.12  4.396.20  5.396.17  6.896.02
1000.0  8.395.65  9.395.26  9.994.67 10.192.12 11.392.32 13.392.32
1000.0 15.392.22 17.392.32 19.392.32 20.392.57 23.391.82 25.391.72
1000.0 27.391.62 28.391.22 29.391.32 31.391.12 33.390.42 34.390.52
1000.0 35.390.42 36.390.82 37.390.72 38.390.72 39.390.72 41.392.02
1000.0 42.391.02 44.391.02 45.391.02 46.391.02 47.391.02 48.091.22
1000.0 49.391.72 50.892.02 51.892.02 52.492.02 52.693.22 53.893.51
1000.0 54.494.82 55.292.15 55.895.12 56.895.34 57.694.93 58.395.32
1000.0 58.796.57 59.396.97 60.396.19 61.396.62
NS 1000.0      9.9      9.9      9.9      9.9      9.9      7.7
NS 1000.0      7.7      7.7      7.7      7.7 0.4      5.5      5.5
NS 1000.0      6.5      6.5      8.8 .045      6.6      8.8      6.6
NS 1000.0      6.7 0.22      7.7 0.35      7.7      7.7      7.7
NS 1000.0      6.6      6.6      6.6      7.7      7.6      7.7
NS 1000.0      7.7      6.6      6.6      7.6      7.6      7.6
NS 1000.0      7.6      5.3      5.3      7.7      7.7      7.7
NS 1000.0      7.7      7.7      7.7      7.7      7.7      7.7
NS 1000.0      7.7      7.7      7.7      7.7      7.7      7.7
CAL11000.0     92.72      81.5
VEL11000.0                                0.29 0.04 1.22
VEL11000.0  0.69 0.68 0.71 2.40 3.09 3.44 2.92 0.57 0.16 3.71 3.54 3.67
VEL11000.0  3.67 1.29 1.05 0.86-0.08 0.57 1.60 3.24 3.47 0.07-0.24 0.29
VEL11000.0  1.25 1.49 0.57-0.06
VEL11000.0
CAL21000.0     92.27      41.5
VEL21000.0
VEL21000.0
VEL21000.0
VEL21000.0
CAL31000.0     94.05      360.0
VEL31000.0
VEL31000.0
VEL31000.0
VEL31000.0
VEL31000.0
ENDJ

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CASCADE	MID		TRANSECT 2									
IOC	1101100100001000101000											
QARD	10.0											
QARD	20.0											
QARD	30.0											
QARD	41.5											
QARD	50.0											
QARD	60.0											
QARD	70.0											
QARD	81.5											
QARD	90.0											
QARD	100.0											
QARD	110.0											
QARD	120.0											
QARD	130.0											
QARD	140.0											
QARD	150.0											
QARD	160.0											
QARD	170.0											
QARD	180.0											
QARD	190.0											
QARD	200.0											
QARD	210.0											
QARD	220.0											
QARD	230.0											
QARD	240.0											
QARD	260.0											
QARD	280.0											
QARD	300.0											
QARD	320.0											
QARD	340.0											
QARD	360.0											
XSEC1000.0	0.00	1.0	93.99	0.0258								
1000.0	0.0100.8	1.2100.3	2.0100.2	3.299.11	4.798.43	7.297.43						
1000.0	9.296.88	10.895.84	11.795.53	12.494.75	13.094.44	14.294.34						
1000.0	16.293.84	17.293.94	19.293.94	20.293.54	21.294.34	23.293.84						
1000.0	25.293.64	27.293.34	29.293.54	31.293.14	33.293.94	35.293.44						
1000.0	37.293.14	39.293.14	41.293.94	43.293.94	44.293.64	45.293.64						
1000.0	46.293.64	47.293.84	48.293.79	48.993.84	49.094.87	49.896.25						
1000.0	50.696.08	51.294.88	52.094.99	52.795.13	53.095.86	54.296.05						
1000.0	55.296.72	56.296.85	57.297.18	58.297.58								
NS 1000.0	9.7	9.7	9.7	9.7	9.7	9.7						
NS 1000.0	9.7	9.7	9.7	9.7	7.6	6.7						
NS 1000.0	6.6	6.6	6.7	.15	6.6	6.6	6.6					
NS 1000.0	0.09	6.6	.10	6.6	6.6	7.6	7.7					
NS 1000.0	6.6	6.6	6.6	.048	6.7	6.7	6.7					
NS 1000.0	6.6	6.6	6.6	6.6	7.7	7.7						
NS 1000.0	7.7	7.7	9.9	9.9	9.9	9.9						
NS 1000.0	9.9	9.9	9.9	9.9								
WSL 1000.0	93.88	94.05	94.14	94.23	94.29	94.35						
WSL 1000.0	94.41	94.46	94.51	94.55	94.60	94.66						
WSL 1000.0	94.71	94.76	94.80	94.85	94.91	94.96						
WSL 1000.0	95.01	95.06	95.12	95.17	95.23	95.29						
WSL 1000.0	95.40	95.52	95.64	95.77	95.90	96.04						
CAL11000.0	94.44	81.5										
VEL11000.0					0.00	0.55						
VEL11000.0	2.65	2.22	2.99	0.40	1.21	3.15	1.93	2.15	2.83	3.46	2.87	3.33
VEL11000.0	2.38	2.50	2.65	4.39	3.54	2.51	-0.51	-0.46	0.24	1.33		
VEL11000.0												
CAL21000.0	94.23	41.5										
VEL21000.0												
VEL21000.0												
VEL21000.0												
VEL21000.0												
CAL31000.0	95.94	360.0										
VEL31000.0												
VEL31000.0												
VEL31000.0												
VEL31000.0												
ENDJ												

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CASCADE          MID          TRANSECT 3
IOC      1101100000001000101000
QARD  10.0
QARD  20.0
QARD  30.0
QARD  41.5
QARD  50.0
QARD  60.0
QARD  70.0
QARD  81.5
QARD  90.0
QARD 100.0
QARD 110.0
QARD 120.0
QARD 130.0
QARD 140.0
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QARD 200.0
QARD 210.0
QARD 220.0
QARD 230.0
QARD 240.0
QARD 260.0
QARD 280.0
QARD 300.0
QARD 320.0
QARD 340.0
QARD 360.0
XSEC1000.0      0.00 1.0      94.70  0.0258
1000.0  0.0100.7  1.399.75  2.899.29  3.597.53  4.597.69  5.597.57
1000.0  7.097.41  8.797.26 10.096.50 11.096.35 12.096.25 13.096.30
1000.0 14.096.00 15.096.30 16.096.30 18.096.00 19.095.80 20.095.80
1000.0 22.095.40 24.095.00 26.095.00 28.095.10 30.094.70 32.094.80
1000.0 34.094.80 36.095.00 38.095.30 40.095.60 42.095.70 43.095.70
1000.0 44.095.60 45.595.35 46.096.55 47.096.60 47.596.80 48.097.06
1000.0 49.097.11 50.097.60 51.097.94
NS 1000.0      7.7      7.7      7.7      7.7      9.9      9.9
NS 1000.0      9.9      9.9      9.9      9.9      3.6      3.6
NS 1000.0      3.6      6.3      6.3      6.3 .3      7.6 .45      7.6
NS 1000.0      6.6      6.6      6.6 .115      6.6      6.6      6.6
NS 1000.0      7.6      6.6 .22      6.6      6.6      7.6      5.5
NS 1000.0      5.3      7.7      7.7      7.7      7.9 .4      7.9
NS 1000.0      7.9      7.9      7.9
CAL11000.0     96.80     81.5
VEL11000.0                                0.41 0.04-0.10-0.21
VEL11000.0-0.17 0.76 0.64 1.44 0.54 0.38 2.19 2.00 2.60 3.17 2.42 2.28
VEL11000.0 2.79 2.40 1.05 1.72 1.34 0.76 0.30 0.02-0.05-0.12 0.00
VEL11000.0
9
CAL21000.0     96.47     41.5
VEL21000.0
VEL21000.0
VEL21000.0
VEL21000.0
CAL31000.0     98.09     360.0
VEL31000.0
VEL31000.0
VEL31000.0
VEL31000.0
ENDJ

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