

12-8-2009

Ex. 279-US-442

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Stream: Long Creek
 Site: SY-8
 Date: 5/13/2004
 Habitat: Pool

Flow: High

BM/HP (ft)	BS (ft)	River Station		HI (ft)	FS (ft)	Elev (ft)
		L/R bank (ft)	Ave (ft)			
BM	4.05	0	104.05	104.05		100.00
HP1		0			4.48	99.57
HP2		19			4.83	99.22
HP3		5			5.23	98.82
TP						
HP3	5.34		104.16	104.16		
HP2					4.93	99.23
HP1					4.59	99.57
BM					4.16	100.00

Comment:

Date: 6/25/2004
 Habitat: Pool

Flow: Mid

BM/HP (ft)	BS (ft)	River Station		HI (ft)	FS (ft)	Elev (ft)
		L/R bank (ft)	Ave (ft)			
BM	4.40	0	104.40	104.40		100.00
HP1		0			4.82	99.58
HP2		19			5.17	99.23
HP3		5			5.57	98.83
TP						
HP3	5.71		104.54	104.54		
HP2					5.30	99.24
HP1					4.96	99.58
BM					4.53	100.01

Comment:

Date: 8/18/2004
 Habitat: Pool

Flow: Low

BM/HP (ft)	BS (ft)	River Station		HI (ft)	FS (ft)	Elev (ft)
		L/R bank (ft)	Ave (ft)			
BM	4.41	0	104.41	104.41		100.00
HP1		0			4.84	99.57
HP2		19			5.19	99.22
HP3		5			5.59	98.82
TP						
HP3	5.67		104.49	104.49		
HP2					5.27	99.22
HP1					4.92	99.57
BM					4.49	100.00

Comment:

(1) Level Loop Survey (BM & HP)

(1) Level Loop Survey

(1) Level Loop Survey

(2) Water Surface Elevation (WSE) Survey

(2) Water Surface Elevation (WSE) Survey

(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	104.16	7.39	0.00	96.77	96.76	44.6
1-R	0	0		7.41	0.00	96.75	96.78	45.9
2-L	19	12	104.16	7.28	0.00	96.88	96.78	39.5
2-R	5	5		7.38	0.00	96.78	96.79	
3-L	55	33	104.16	7.35	0.00	96.81	96.77	
3-R	11	11		7.39	0.00	96.77	96.77	

Note: HCLWS FS=7.59; RWS FS=7.68; 70' dia of HC BED=9.72; WSE=7.98
 WSE slope = 0.055%

(3) Meter and propeller ID for Velocity Correction

Meter ID: 4099
 Propeller ID: 1A

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	104.54	8.03	0.00	96.51	96.51	26.2
1-R	0	0		8.04	0.00	96.50	96.50	27.0
2-L	19	12	104.54	8.02	0.00	96.52	96.48	19.1
2-R	5	5		8.06	0.00	96.48	96.48	
3-L	55	33	104.54	8.06	0.00	96.48	96.47	
3-R	11	11		8.07	0.00	96.47	96.47	

Note: WSE's increases going downstream, use slope of Zero.
 WSE slope = -0.055%

(3) Meter and propeller ID for Velocity Correction

Meter ID: 3602
 Propeller ID: 3a

(2) Water Surface Elevation (WSE) Survey

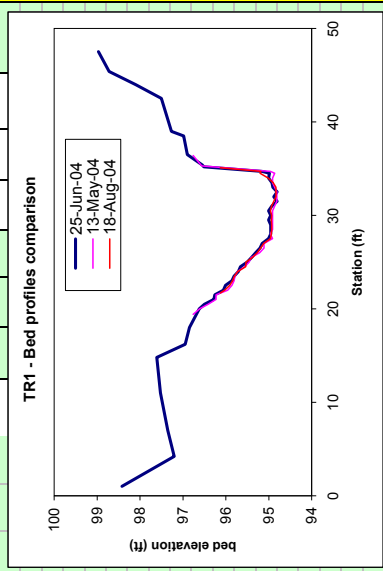
TR	River Station		HI (ft)	FS (ft)	Rod (ft)	WSE (ft)	Ave WSE (ft)	Q (cfs)
	L/R bank (ft)	Ave (ft)						
1-L	0	0	104.49	8.36	0.00	96.13	96.13	10.6
1-R	0	0		8.36	0.00	96.13	96.15	11.2
2-L	19	12	104.49	8.33	0.00	96.16	96.14	7.3
2-R	5	5		8.35	0.00	96.14	96.14	
3-L	55	33	104.49	8.34	0.00	96.15	96.13	
3-R	11	11		8.36	0.00	96.13	96.13	

Note: HC LWSE FS=8.46; RWSE FS=8.43
 WSE slope = 0.018%

(3) Meter and propeller ID for Velocity Correction

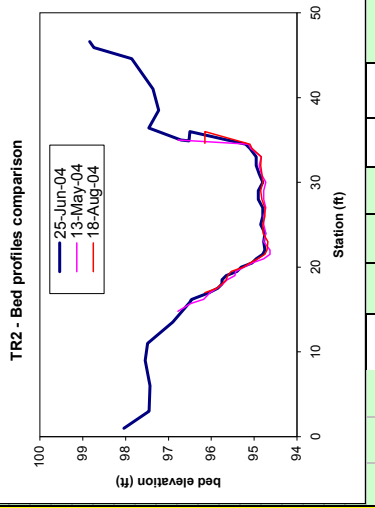
Meter ID: 5750
 Propeller ID: 2A

Stream: Long Creek	13-May-04										25-Jun-04										18-Aug-04									
	Sta (ft)	FS (ft)	Ground (ft)	Depth (ft)	Vel (ft/s)	Ave (ft)	Angle (deg)	q (cfs)	substrate	Sta (ft)	FS (ft)	Ground (ft)	Depth (ft)	Vel (ft/s)	Ave (ft)	Angle (deg)	q (cfs)	substrate	Sta (ft)	FS (ft)	Ground (ft)	Depth (ft)	Vel (ft/s)	Ave (ft)	Angle (deg)	q (cfs)	substrate			
RWP	19.4		96.76	0.00	0.00	0.00	0.00			1.0	6.12	98.42						1.1												
RWE	20.5		96.61	0.15	0.10	0.18	0.02			4.2	7.34	97.20						1.1												
Survey HI	20.5		96.61	0.35	0.07	0.15	0.03			7.0	7.19	97.35						1.1												
Date	6/25/2004	104.16	44.6	21.0	96.23	0.53	0.02	0.04	0.01	11.0	7.02	97.52						1.1												
8/18/2004	104.49	10.6	21.5	96.23	0.53	1.09	1.14	0.30	0.01	16.2	7.59	96.95						1.1												
			22.0	95.96	0.80	1.35	1.41	0.56	0.01	18.0	7.69	96.85						1.1												
			22.5	95.86	0.90	1.43	1.49	0.67	0.01	20.0	7.92	96.62						1.2												
			23.0	95.81	0.95	1.62	1.69	0.80	0.01	RWE	20.5	8.04	96.50	0.00	0.00	0.00	0.00	2.1												
			23.5	95.79	0.97	1.60	1.67	0.81	0.01	21.0		96.28	0.23	0.05	0.15	0.15	0.02	2.1												
			24.0	95.73	1.03	1.76	1.83	0.94	0.01	21.5		96.26	0.25	0.37	0.40	0.40	0.05	2.1												
			24.5	95.56	1.20	1.81	1.88	1.13	0.01	22.0		96.06	0.45	0.81	0.83	0.19	2.4													
			25.0	95.46	1.30	1.83	1.90	1.24	0.01	22.5		96.01	0.50	0.76	0.78	0.20	2.4													
			25.5	95.41	1.35	1.79	1.86	1.26	0.01	23.0		95.86	0.65	1.03	1.03	0.33	4.2													
			26.0	95.21	1.55	2.06	2.14	1.66	0.01	23.5		95.81	0.70	0.92	0.95	0.33	4.2													
			26.5	95.11	1.65	1.96	2.04	1.68	0.01	24.0		95.71	0.80	1.04	1.07	0.43	4.2													
			27.0	95.11	1.65	2.08	2.16	1.78	0.01	24.5		95.66	0.85	1.09	1.12	0.48	4.2													
			27.5	94.91	1.85	2.13	2.21	2.05	0.01	25.0		95.51	1.00	1.14	1.17	0.58	4.2													
			28.0	94.96	1.80	2.17	2.25	2.03	0.01	25.5		95.41	1.10	1.18	1.21	0.66	4.3													
			28.5	94.91	1.85	2.26	2.34	2.17	0.01	26.0		95.31	1.20	1.29	1.32	0.79	4.3													
			29.0	94.91	1.85	2.22	2.30	2.13	0.01	26.5		95.21	1.30	1.34	1.37	0.89	4.2													
			29.5	94.91	1.85	2.35	2.44	2.25	0.01	27.0		95.16	1.35	1.43	1.46	0.98	4.2													
			30.0	94.91	1.85	2.38	2.47	2.28	0.01	27.5		95.01	1.50	1.54	1.57	1.18	4.2													
			30.5	94.91	1.85	2.36	2.45	2.26	0.01	28.0		94.96	1.55	1.54	1.57	1.22	8.4													
			31.0	94.86	1.90	2.21	2.29	2.18	0.01	28.5		94.96	1.55	1.65	1.68	1.30	8.4													
			31.5	94.81	1.95	2.36	2.45	2.38	0.01	29.0		94.96	1.55	1.74	1.77	1.37	8.4													
			32.0	94.81	1.95	2.36	2.45	2.38	0.01	29.5		95.01	1.50	1.82	1.85	1.39	8.4													
			32.5	94.81	1.95	2.29	2.37	2.31	0.01	30.0		94.96	1.55	1.83	1.86	1.44	8.4													
			33.0	94.86	1.90	2.27	2.35	2.24	0.01	30.5		95.01	1.50	1.84	1.87	1.40	8.4													
			33.5	94.91	1.85	1.97	2.05	30	0.00	31.0		94.93	1.58	1.98	2.01	1.59	2.5													
			34.0	94.91	1.85	1.79	1.86	30	1.49	31.5		94.81	1.70	1.95	1.98	10	1.66	2.5												
			34.5	94.86	1.90	1.51	1.57	30	0.91	32.0		94.89	1.62	1.96	1.99	20	1.51	2.5												
			34.7	94.96	1.80	1.42	1.48	30	0.92	32.5		94.81	1.70	2.06	2.09	30	1.54	2.4												
			35.3	96.56	0.20	0.34	0.42	0.07	0.00	33.0		94.91	1.60	1.96	1.99	30	1.38	2.4												
LWE	36.4		96.76	0.00	0.00	0.00	0.00	0.00	0.00	33.5		94.93	1.58	1.75	1.78	30	1.22	2.4												
LWP										34.0		95.01	1.50	1.59	1.62	30	1.05	2.4												
										34.5		94.99	1.52	1.30	1.33	30	0.61	2.4												
										34.7		95.16	1.35	0.95	0.98	30	0.40	2.4												
										LWE	35.2	8.03	96.51	0.00	0.00	0.00	0.00	2.1												
										35.4		7.99	96.55					1.1												
										36.5		7.64	96.90					1.1												
										38.5		7.56	96.98					1.1												
										39.0		7.27	97.27					1.1												
										42.5		7.04	97.50					1.1												
										44.0		6.44	98.10					1.1												
										45.4		5.82	98.72					1.1												
										LWP	47.5	5.57	98.97					1.1												

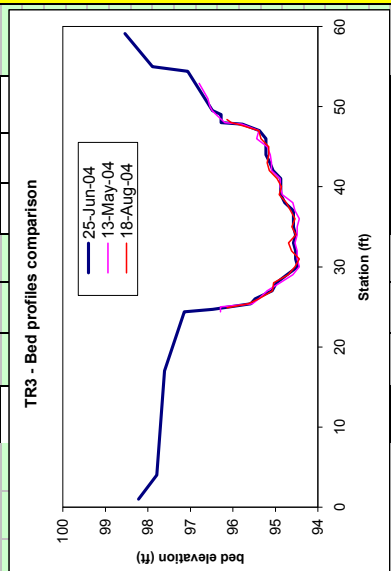


* - Velocity Estimated

Stream: Long Creek		13-May-04							25-Jun-04							18-Aug-04										
Site: SY-8	Transect: 2	Sta (ft)	FS (ft)	Ground (ft)	Depth (ft)	Vel (ft/s) V _{0.2m/6}	V _{0.8} Ave (cfs)	α (cfs)	substrate	Sta (ft)	FS (ft)	Ground (ft)	Depth (ft)	Vel (ft/s) V _{0.2m/6}	V _{0.8} Ave (cfs)	α (cfs)	substrate	Sta (ft)	FS (ft)	Ground (ft)	Depth (ft)	Vel (ft/s) V _{0.2m/6}	V _{0.8} Ave (cfs)	α (cfs)	substrate	
	Habitat: Pool																									
Survey	HI Q	14.8	96.78	0.00	0.00	0.00	0.00	0.00																		
Date	(ft)	15.7	96.48	0.30	0.01	-0.18	-0.07	-0.18																		
5/13/2004	104.16	16.2	96.18	0.60	-0.09	-0.27	-0.13	-0.27																		
6/25/2004	104.54	17.0	96.03	0.75	-0.18	-0.35	-0.13	-0.35																		
8/18/2004	104.49	17.5	95.86	0.92	-0.04	-0.09	-0.04	-0.09																		
		18.0	95.73	1.05	0.25	0.34	0.18	0.34																		
		18.5	95.63	1.15	0.40	0.47	0.27	0.47																		
		19.0	95.45	1.33	0.50	0.56	0.37	0.56																		
		19.5	95.43	1.35	0.66	0.71	0.48	0.71																		
		20.0	95.23	1.55	0.81	0.86	0.67	0.86																		
		20.5	95.05	1.73	0.95	1.00	0.86	1.00																		
		21.0	94.78	2.00	1.21	1.27	1.27	1.27																		
		21.5	94.63	2.15	1.26	1.32	1.42	1.32																		
		22.0	94.63	2.15	1.39	1.45	2.34	1.45																		
		24.0	94.73	2.05	1.51	1.57	3.23	1.57																		
		23.0	94.78	2.00	1.50	1.56	3.13	1.56																		
		25.0	94.78	2.00	1.71	1.78	3.56	1.78																		
		26.0	94.78	2.00	1.84	1.91	3.83	1.91																		
		27.0	94.73	2.05	1.84	1.91	3.92	1.91																		
		28.0	94.78	2.00	1.84	1.91	3.83	1.91																		
		29.0	94.78	2.00	1.73	1.80	3.60	1.80																		
		30.0	94.73	2.05	1.67	1.74	3.57	1.74																		
		31.0	94.83	1.95	1.44	1.50	2.93	1.50																		
		* 32.0	94.88	1.90	1.35	1.41	2.68	1.41																		
		* 33.0	94.83	1.95	0.95	1.00	1.94	1.00																		
		34.5	95.08	1.70	1.24	1.30	1.65	1.30																		
		LWE 35.0	96.78	0.00	0.00	0.00	0.00	0.00																		



Stream: Long Creek	Site: SY-8	Transsect: 3	Habitat: Pool	13-May-04												25-Jun-04												18-Aug-04											
				Sta	FS	Ground	Depth	Vel (ft/s)	Angle	q	substrate	Sta	FS	Ground	Depth	Vel (ft/s)	Angle	q	substrate	Sta	FS	Ground	Depth	Vel (ft/s)	Angle	q	substrate												
				(ft)	(ft)	(ft)	(ft)	V _{0.2}	Ave	(cfs)		(ft)	(ft)	(ft)	(ft)	V _{0.2}	Ave	(cfs)		(ft)	(ft)	(ft)	(ft)	V _{0.2}	Ave	(cfs)													
				RWP				0.00																															
				RWE	24.4	96.29	0.50	0.00	-0.32				0.00																										
					25.0	96.29	0.50	-0.23	-0.23				0.00																										
					25.4	95.54	1.25	-0.14	-0.73				-0.10																										
					26.0	95.39	1.40	-0.68	-0.73				-0.82																										
					27.0	95.19	1.60	0.42	0.49				-0.73																										
					28.0	94.89	1.90	0.13	0.22				-0.32																										
					29.0	94.59	2.20	1.18	1.23				-0.14																										
					30.0	94.44	2.35	1.84	1.91				0.72																										
					31.0	94.49	2.30	1.64	1.71				1.44																										
					32.0	94.49	2.30	1.8	1.87				1.55																										
					33.0	94.54	2.25	2.22	2.30				1.45																										
					34.0	94.49	2.30	2.31	2.39				1.65																										
					35.0	94.49	2.30	2.02	2.10				1.57																										
					36.0	94.44	2.35	1.91	1.99				1.44																										
					37.0	94.54	2.25	1.71	1.78				1.20																										
					38.0	94.59	2.20	1.94	2.02				0.79																										
					39.0	94.84	1.95	2.08	2.16				0.16																										
					40.0	94.89	1.90	1.39	1.45				0.16																										
					41.0	94.89	1.90	0.84	0.89				0.07																										
					42.0	95.09	1.70	-0.16	-0.25				0.08																										
					43.0	95.09	1.70	-0.44	-0.51				-0.28																										
					44.0	95.12	1.67	-0.80	-0.85				-0.68																										
					45.0	95.79	1.60	-1.16	-1.21				-0.78																										
					46.0	95.44	1.35	-0.94	-0.98				-0.86																										
					47.0	95.39	1.40	-0.99	-1.04				-1.12																										
					47.8	95.79	1.00	-0.44	-0.51				-0.23																										
					48.0	96.19	0.60	-1.25	-1.31				-0.90																										
					49.0	96.39	0.40	-0.84	-0.89				-0.10																										
					49.5	96.49	0.30	-0.20	-0.29				0.00																										
					50.0	96.54	0.25	-0.15	-0.24				0.00																										
					51.0	96.59	0.20	-0.01	-0.02				0.00																										
					LWE	52.9	96.79	0.00	0.00				0.00																										
					LWP																																		



Pool	HGH										TRANSECT 1		
IOC	1100000100001000101000												
QARD	6.0												
QARD	8.0												
QARD	11.5												
QARD	15.0												
QARD	20.0												
QARD	25.0												
QARD	28.1												
QARD	30.0												
QARD	32.5												
QARD	35.0												
QARD	37.5												
QARD	40.0												
QARD	42.5												
QARD	45.0												
QARD	48.0												
QARD	50.0												
QARD	52.5												
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												
XSEC	0.0	0.0	1.0	94.81	0.00055								
	0.0	1.0	98.4	4.2	97.2	7.0	97.3	11.0	97.5	14.8	97.6	16.2	96.9
	0.0	18.0	96.8	19.4	96.8	20.0	96.6	20.5	96.4	21.0	96.2	21.5	96.2
	0.0	22.0	96.0	22.5	95.9	23.0	95.8	23.5	95.8	24.0	95.7	24.5	95.6
	0.0	25.0	95.5	25.5	95.4	26.0	95.2	26.5	95.1	27.0	95.1	27.5	94.9
	0.0	28.0	95.0	28.5	94.9	29.0	94.9	29.5	94.9	30.0	94.9	30.5	94.9
	0.0	31.0	94.9	31.5	94.8	32.0	94.8	32.5	94.8	33.0	94.9	33.5	94.9
	0.0	34.0	94.9	34.5	94.9	34.7	95.0	35.3	96.6	36.4	96.8	36.5	96.9
	0.0	38.5	97.0	39.0	97.3	42.5	97.5	44.0	98.1	45.4	98.7	47.5	99.0
NS	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
NS	0.0	1.1	1.1	1.2	2.1	.03	2.1	.035	2.1	.035	2.1	2.1	2.1
NS	0.0	2.4	2.4	2.4	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
NS	0.0	4.2	4.3	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.2	4.2	4.2
NS	0.0	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
NS	0.0	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
NS	0.0	2.4	2.4	2.4	2.4	2.4	2.1	1.1	1.1	1.1	1.1	1.1	1.1
NS	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
WSL	0.0	95.90	95.99	96.12	96.22	96.33	96.43	96.55	96.62	96.79	96.81	96.81	96.81
WSL	0.0	96.48	96.51	96.55	96.58	96.62	96.65	96.71	96.74	96.76	96.79	96.81	96.81
WSL	0.0	96.68	96.71	96.74	96.76	96.79	96.81	96.86	96.90	96.95	97.02	97.05	97.05
WSL	0.0	96.86	96.90	96.95	96.98	97.02	97.05	97.09	97.12	97.15	97.18	97.20	97.26
WSL	0.0	97.09	97.12	97.15	97.18	97.20	97.26	97.26	97.26	97.26	97.26	97.26	97.26
CAL1	0.0	96.76	48.0										
VEL1	0.0					0.00	0.18	0.15	0.04	1.14			
VEL1	0.0	1.41	1.49	1.69	1.67	1.83	1.88	1.90	1.86	2.14	2.04	2.16	2.21
VEL1	0.0	2.25	2.34	2.30	2.44	2.47	2.45	2.29	2.45	2.45	2.37	2.35	2.05
VEL1	0.0	1.86	1.57	1.48	0.42	0.00							
CAL2	0.0	96.51	28.1										
VEL2	0.0												
VEL2	0.0												
VEL2	0.0												
VEL2	0.0												
CAL3	0.0	96.13	11.5										
VEL3	0.0												
VEL3	0.0												
VEL3	0.0												
VEL3	0.0												
ENDJ													

Pool											HGH											TRANSECT 2													
IOC	1100000100001000101000																																		
QARD	6.0																																		
QARD	8.0																																		
QARD	11.5																																		
QARD	15.0																																		
QARD	20.0																																		
QARD	25.0																																		
QARD	28.1																																		
QARD	30.0																																		
QARD	32.5																																		
QARD	35.0																																		
QARD	37.5																																		
QARD	40.0																																		
QARD	42.5																																		
QARD	45.0																																		
QARD	48.0																																		
QARD	50.0																																		
QARD	52.5																																		
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																																		
XSEC	0.0		0.0	1.0		94.81		0.00055																											
	0.0	1.0	98.0	3.0	97.4	6.0	97.4	9.0	97.5	11.0	97.5	13.5	96.9																						
	0.0	14.8	96.8	15.7	96.5	16.2	96.2	17.0	96.0	17.5	95.9	18.0	95.7																						
	0.0	18.5	95.6	19.0	95.4	19.5	95.4	20.0	95.2	20.5	95.1	21.0	94.8																						
	0.0	21.5	94.6	22.0	94.6	23.0	94.8	24.0	94.7	25.0	94.8	26.0	94.8																						
	0.0	27.0	94.7	28.0	94.8	29.0	94.8	30.0	94.7	31.0	94.8	32.0	94.9																						
	0.0	33.0	94.8	34.0	95.1	34.5	95.1	35.0	96.8	36.4	97.5	38.5	97.2																						
	0.0	41.0	97.4	44.6	97.9	45.9	98.7	46.6	98.8																										
NS	0.0		1.1		1.1		1.1		1.1		1.1		1.1																						
NS	0.0		1.2		1.2		9.2		9.2		9.2		2.3																						
NS	0.0		2.3		2.3		2.4		2.4		2.4		4.2																						
NS	0.0		5.4		5.8		5.8		5.8		5.8		8.5																						
NS	0.0		8.5		5.8		5.6		5.6		6.5		6.5																						
NS	0.0		6.5		6.5		6.5		6.5		1.1		1.1																						
NS	0.0		1.1		1.1		1.1		1.1																										
WSL	0.0		95.91		96.00		96.13		96.24		96.36		96.46																						
WSL	0.0		96.51		96.55		96.59		96.63		96.66		96.70																						
WSL	0.0		96.73		96.76		96.80		96.83		96.86		96.88																						
WSL	0.0		96.94		96.99		97.04		97.08		97.13		97.17																						
WSL	0.0		97.21		97.24		97.28		97.32		97.35		97.42																						
CAL1	0.0		96.78		48.0																														
VEL1	0.0																													0.00	0.02	-0.18	-0.27	-0.09	0.34
VEL1	0.0	0.47	0.56	0.71	0.86	1.00	1.27	1.32	1.45	1.56	1.57	1.78	1.73																						
VEL1	0.0	1.91	1.91	1.80	1.74	1.50	1.41	1.00	1.30	1.01	0.00																								
VEL1	0.0																																		
CAL2	0.0		96.50		28.1																														
VEL2	0.0																																		
VEL2	0.0																																		
VEL2	0.0																																		
VEL2	0.0																																		
CAL3	0.0		96.15		11.5																														
VEL3	0.0																																		
VEL3	0.0																																		
VEL3	0.0																																		
VEL3	0.0																																		
ENDJ																																			

Pool	HGH		TRANSECT 3					
IOC	1100000100001000101000							
QARD	6.0							
QARD	8.0							
QARD	11.5							
QARD	15.0							
QARD	20.0							
QARD	25.0							
QARD	28.1							
QARD	30.0							
QARD	32.5							
QARD	35.0							
QARD	37.5							
QARD	40.0							
QARD	42.5							
QARD	45.0							
QARD	48.0							
QARD	50.0							
QARD	52.5							
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							
XSEC	0.0	0.0	1.0	94.81	0.00055			
	0.0	1.0	98.2	4.0	97.8	17.0	97.6	24.4
	0.0	26.0	95.4	27.0	95.2	28.0	94.9	29.0
	0.0	32.0	94.5	33.0	94.5	34.0	94.5	35.0
	0.0	38.0	94.6	39.0	94.8	40.0	94.9	41.0
	0.0	44.0	95.1	45.0	95.2	46.0	95.4	47.0
	0.0	49.0	96.4	49.5	96.5	50.0	96.5	51.0
	0.0	55.0	97.9	59.1	98.5			
NS	0.0	1.1	1.1	1.1	1.1	1.2	2.9	
NS	0.0	2.9	2.4	4.2	4.5	5.4	5.4	
NS	0.0	5.6	5.6	5.6	5.6	5.6	5.4	
NS	0.0	5.4	5.4	5.4	5.4	5.6	5.4	
NS	0.0	5.4	5.4	5.4	5.6	2.9	2.9	
NS	0.0	2.9	1.2	1.2	1.2	1.1	1.1	
NS	0.0	1.1	1.1					
WSL	0.0	95.91	96.01	96.14	96.24	96.36	96.47	
WSL	0.0	96.52	96.56	96.60	96.64	96.68	96.71	
WSL	0.0	96.75	96.78	96.82	96.85	96.88	96.91	
WSL	0.0	96.96	97.02	97.07	97.12	97.16	97.21	
WSL	0.0	97.25	97.29	97.33	97.37	97.41	97.48	
CAL1	0.0	96.79	48.0					
VEL1	0.0		0.00-0.32-0.23-0.73	0.49	0.22	1.23	1.91	1.71
VEL1	0.0	1.87	2.30	2.39	2.10	1.99	1.78	2.02
VEL1	0.0	0.85-1.21-0.98-1.04-0.51-1.31-0.89-0.29-0.24-0.02	0.00					
VEL1	0.0							
CAL2	0.0	96.48	28.1					
VEL2	0.0							
VEL2	0.0							
VEL2	0.0							
VEL2	0.0							
CAL3	0.0	96.14	11.5					
VEL3	0.0							
VEL3	0.0							
VEL3	0.0							
VEL3	0.0							
ENDJ								

Stream: Long Creek

Site: SY_8

Date: 5/13/2004

Habitat: Run

Date: 6/25/2004

Habitat: Run

Date: 8/18/2004

Habitat: Run

Flow: High

Flow: Mid

Flow: Low

(1) Level Loop Survey (BM & HP)

BM/HP (ft)	BS (ft)	HI (ft)	FS (ft)	Elev (ft)
BM	4.90	104.90		100.00
HP3			4.79	100.11
HP2			5.57	99.33
HP1			5.07	99.83
TP				
HP1	5.02	104.85		99.33
HP2			5.52	99.33
HP3			4.73	100.12
BM			4.85	100.00

Comment: Turned on HP1.

(1) Level Loop Survey

BM/HP (ft)	BS (ft)	HI (ft)	FS (ft)	Elev (ft)
BM	4.79	104.79		100.00
HP1			4.98	99.81
HP2			5.44	99.35
HP3			4.63	100.16
TP				
HP3	4.68	104.84		99.35
HP2			5.49	99.35
HP1			5.03	99.81
BM			4.84	100.00

Comment:

(1) Level Loop Survey

BM/HP (ft)	BS (ft)	HI (ft)	FS (ft)	Elev (ft)
BM	4.48	104.48		100.00
HP1			4.65	99.83
HP2			5.14	99.34
HP3			4.36	100.12
TP				
HP3	4.12	104.24		99.34
HP2			4.90	99.34
HP1			4.40	99.84
BM			4.24	100.00

Comment: Run BM 0.52' higher than Rif BM

(2) Water Surface Elevation (WSE) Survey

TR	River Station		Rod (ft)	FS (ft)	HI (ft)	WSE (ft)	Ave WSE (ft)	Q (cfs)
	L/R bank	Ave						
1-L	0	0	0.00	7.21	104.82	97.61	97.61	41.7
1-R	0	0	0.00	7.22	104.58	97.60	97.60	
2-L	68	64	0.00	6.86	104.58	97.72	97.73	50.9
2-R	59	59	0.00	6.84	104.58	97.74	97.74	
3-L	111	103	0.00	6.73	104.58	97.85	97.81	49.4
3-R	94	94	0.00	6.81	104.58	97.77	97.77	

Note: 60' d/s wse FS=7.37; bed FS=8.60; TR3 mwse FS=6.75
WSE slope = 0.185%

(2) Water Surface Elevation (WSE) Survey

TR	River Station		Rod (ft)	FS (ft)	HI (ft)	WSE (ft)	Ave WSE (ft)	Q (cfs)
	L/R bank	Ave						
1-L	0	0	1.31	8.96	104.80	97.15	97.13	22.4
1-R	0	0	0.38	8.07	104.13	97.11	97.11	
2-L	68	64	0.00	6.85	104.13	97.28	97.28	27.5
2-R	59	59	1.06	7.92	104.84	97.27	97.27	
3-L	111	103	0.82	8.21	104.84	97.45	97.41	35.0
3-R	94	94	0.07	7.54	104.84	97.37	97.37	

Note: 50' u/s TR3 FS=8.75, Rod=1.43; 40 d/s TR1 FS=9.76, Rod=2.15
WSE slope = 0.252%

(2) Water Surface Elevation (WSE) Survey

TR	River Station		Rod (ft)	FS (ft)	HI (ft)	WSE (ft)	Ave WSE (ft)	Q (cfs)
	L/R bank	Ave						
1-L	0	0	0.00	7.68	104.49	96.81	96.80	11.3
1-R	0	0	0.00	7.70	104.49	96.79	96.79	
2-L	68	64	0.00	7.59	104.49	96.90	96.90	11.4
2-R	59	59	0.00	7.59	104.49	96.90	96.90	
3-L	111	103	0.00	7.30	104.24	96.94	96.94	12.0
3-R	94	94	0.00	7.31	104.24	96.93	96.93	

Note: WSE slope = 0.122%
Ave Q= 11.6

(3) Meter and propeller ID for Velocity Correction

Meter ID: 0068
Propeller ID: na

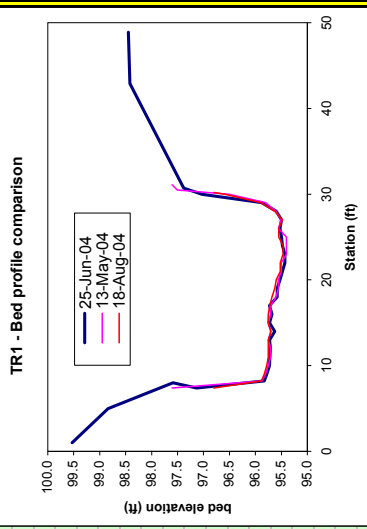
(3) Meter and propeller ID for Velocity Correction

Meter ID: 3602
Propeller ID: 3a

(3) Meter and propeller ID for Velocity Correction

Meter ID: 5750
Propeller ID: 2a

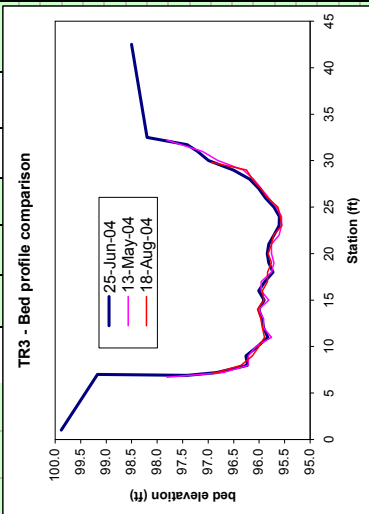
Stream: Long Creek	13-May-04										25-Jun-04										18-Aug-04									
Site: SY_8	Sta	FS	Ground	Depth	Vel (ft/s)	q	substrate	Sta	FS	Ground	Depth	Vel (ft/s)	q	substrate	Sta	FS	Ground	Depth	Vel (ft/s)	q	substrate									
Transsect: I	(ft)	(ft)	(ft)	(ft)	V _{0.20/6}	Ave		(ft)	(ft)	(ft)	(ft)	V _{0.20/6}	Ave		(ft)	(ft)	(ft)	(ft)	V _{0.20/6}	Ave										
Habitat: Run						(cfs)																								
Survey	HI	Q																												
Date	(ft)	(cfs)																												
5/13/2004	104.82	41.7		0.00	0.00	0.00	0.00	1.0	5.27	99.53																				
6/25/2004	104.80	22.4		1.73	0.00	0.01	0.01	5.0	5.96	98.84																				
8/18/2004	104.49	11.3		1.80	-0.14	-0.21	-0.34	8.0	7.21	97.59																				
				1.85	-0.43	-0.53	-0.98	UCB	7.4	97.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00								
				1.90	-0.18	-0.25	-0.48	LBE	8.2	95.83	1.30	0.00	0.01	0.01	2.4	2.4	2.4	2.4	0.00	0.00	0.00	0.00	0.00							
				1.90	0.25	0.33	0.63		9.0	95.78	1.35	-0.19	-0.24	-0.29	2.4	2.4	2.4	2.4	0.16	0.22	0.28	0.35	0.45							
				1.85	0.20	0.28	0.51		11.0	95.72	1.41	0.14	0.19	0.27	5.2	5.2	5.2	5.2	0.19	0.27	0.35	0.45	0.56							
				1.90	0.29	0.37	0.71		12.0	95.71	1.42	0.39	0.42	0.60	5.4	5.4	5.4	5.4	0.42	0.60	0.68	0.73	0.85							
				1.85	0.32	0.41	0.75		13.0	95.73	1.40	0.42	0.45	0.63	5.4	5.4	5.4	5.4	0.45	0.63	0.71	0.79	0.91							
				1.90	0.47	0.57	1.09		14.0	95.63	1.50	0.60	0.62	0.93	5.4	5.4	5.4	5.4	0.62	0.93	1.01	1.13	1.30							
				1.90	0.87	1.02	2.03		15.0	95.73	1.40	0.80	0.82	1.15	5.4	5.4	5.4	5.4	0.82	1.15	1.25	1.41	1.63							
				2.05	0.82	0.96	1.97		17.0	95.73	1.40	0.97	1.00	1.40	5.4	5.4	5.4	5.4	1.00	1.40	1.55	1.75	2.00							
				2.05	0.79	0.93	1.90		18.0	95.58	1.55	1.04	1.07	1.65	5.4	5.4	5.4	5.4	1.07	1.65	1.80	2.00	2.30							
				2.10	0.76	0.89	1.88		19.0	95.58	1.55	1.06	1.09	1.69	5.6	5.6	5.6	5.6	1.09	1.69	1.85	2.00	2.30							
				2.10	1.10	1.28	2.69		20.0	95.53	1.60	1.00	1.03	1.64	5.6	5.6	5.6	5.6	1.03	1.64	1.80	2.00	2.30							
				2.20	2.19	2.52	5.54		21.0	95.48	1.65	1.27	1.30	2.14	5.4	5.4	5.4	5.4	1.30	2.14	2.30	2.50	2.80							
				2.20	2.31	2.66	5.84		22.0	95.43	1.70	1.86	1.89	3.21	5.6	5.6	5.6	5.6	1.89	3.21	3.40	3.60	3.90							
				2.08	2.08	2.39	5.26		23.0	95.43	1.70	1.41	1.44	2.45	5.8	5.8	5.8	5.8	1.44	2.45	2.60	2.80	3.10							
				2.05	2.00	2.30	4.72		24.0	95.48	1.65	1.45	1.48	2.44	5.6	5.6	5.6	5.6	1.48	2.44	2.60	2.80	3.10							
				2.10	1.39	1.61	3.38		25.0	95.50	1.63	1.05	1.08	1.76	5.6	5.6	5.6	5.6	1.08	1.76	1.90	2.10	2.40							
				2.00	0.85	0.99	1.99		26.0	95.53	1.60	0.18	0.23	0.37	8.5	8.5	8.5	8.5	0.23	0.37	0.45	0.50	0.55							
				1.80	0.34	0.43	0.77		27.0	95.50	1.63	-0.02	-0.06	-0.09	5.6	5.6	5.6	5.6	-0.06	-0.09	-0.10	-0.11	-0.12							
				1.10	-0.11	-0.17	-0.14		28.0	95.60	1.53	-0.21	-0.26	-0.39	5.2	5.2	5.2	5.2	-0.26	-0.39	-0.45	-0.50	-0.55							
				0.10	-0.05	-0.08	0.00		29.0	95.88	1.25	-0.26	-0.30	-0.38	4.2	4.2	4.2	4.2	-0.30	-0.38	-0.40	-0.45	-0.50							
				0.00	0.00	0.00	0.00		30.0	97.03	0.10	0.01	0.03	0.00	1.2	1.2	1.2	1.2	0.03	0.00	0.00	0.00	0.00							
				0.00	0.00	0.00	0.00		30.2	97.13	0.00	0.00	0.00	0.00	1.2	1.2	1.2	1.2	0.00	0.00	0.00	0.00	0.00							
									30.7	7.42	97.38																			
									42.9	6.38	98.42																			
									48.9	6.35	98.45																			



Stream: Long Creek Site: SY_8 Transsect: 3 Habitat: Run	13-May-04						25-Jun-04						18-Aug-04												
	Sta (ft)	FS (ft)	Ground (ft)	Depth (ft)	Vel (ft/s) V _{0.206}	Ave (cfs)	q (cfs)	substrate	Sta (ft)	FS (ft)	Ground (ft)	Depth (ft)	Vel (ft/s) V _{0.206}	Ave (cfs)	q (cfs)	substrate	Sta (ft)	FS (ft)	Ground (ft)	Depth (ft)	Vel (ft/s) V _{0.8}	Angle (deg)	q (cfs)	substrate	
Survey	6.7	97.81	97.81	0.00	0.00	0.00	0.00		7.0	4.96	99.88					1.1		7.1	96.94	96.94	0.00	0.00			
Date	LBE 7.2	96.71	96.71	1.10	-0.25	-0.33	-0.24		LWE 6.9	5.67	99.17	0.00	0.00	0.00	0.00	1.1		LBE 7.2	96.84	96.84	0.10	0.00	0.00		
5/13/2004	8.0	96.21	96.21	1.60	-0.25	-0.33	-0.48		LBE 7.2	96.84	97.41	0.57	-0.14	-0.21	-0.06	2.3		8.0	96.36	96.36	0.58	0.00	0.01	0.01	
6/25/2004	9.0	96.21	96.21	1.60	-0.16	-0.23	-0.37		8.0	96.23	98.18	1.18	-0.05	-0.08	-0.08	2.3		9.0	96.14	96.14	0.80	0.00	0.01	0.01	
8/18/2004	10.0	96.06	96.06	1.75	-0.12	-0.18	-0.32		9.0	96.26	98.15	1.15	0.10	0.16	0.18	2.3		10.0	96.01	96.01	0.93	0.00	0.01	0.01	
	11.0	95.76	95.76	2.05	-0.03	-0.05	-0.10		10.0	96.03	98.13	1.38	0.43	0.53	0.73	2.3		11.0	95.90	95.90	1.04	0.32	0.39	0.40	
	12.0	95.91	95.91	1.90	0.21	0.29	0.55		11.0	95.83	98.15	1.58	0.24	0.32	0.51	2.3		12.0	95.94	95.94	1.00	0.31	0.38	0.38	
	13.0	95.91	95.91	1.90	0.41	0.51	0.96		12.0	95.91	98.15	1.50	0.26	0.34	0.52	3.2		13.0	95.97	95.97	0.97	0.36	0.43	0.41	
	14.0	96.01	96.01	1.80	1.03	1.20	2.16		13.0	95.94	98.17	1.47	0.66	0.78	1.15	4.2		14.0	96.04	96.04	0.90	0.62	0.66	0.60	
	15.0	95.81	95.81	2.00	0.98	1.14	2.28		14.0	96.01	98.14	1.40	0.69	0.82	1.14	4.2		15.0	95.91	95.91	1.03	0.69	0.73	0.75	
	16.0	95.96	95.96	1.85	1.28	1.49	2.75		15.0	95.90	98.15	1.51	1.07	1.24	1.88	4.2		16.0	95.94	95.94	1.00	0.58	0.62	0.62	
	17.0	95.96	95.96	1.85	1.33	1.54	2.85		16.0	96.01	98.14	1.40	1.14	1.32	1.85	2.4		17.0	95.84	95.84	1.10	0.49	0.54	0.59	
	18.0	95.76	95.76	2.05	1.46	1.69	3.47		17.0	95.89	98.15	1.52	1.44	1.67	2.54	2.4		18.0	95.84	95.84	1.10	0.87	0.92	1.01	
	19.0	95.71	95.71	2.10	1.95	2.25	4.72		18.0	95.73	98.16	1.61	1.61	1.86	3.13	2.4		19.0	95.76	95.76	1.18	0.75	0.79	0.94	
	20.0	95.76	95.76	2.05	1.82	2.10	4.30		19.0	95.81	98.16	1.60	1.42	1.64	2.63	2.4		20.0	95.83	95.83	1.11	0.81	0.85	0.95	
	21.0	95.76	95.76	2.05	1.77	2.04	4.19		20.0	95.84	98.15	1.57	1.59	1.84	2.89	2.4		21.0	95.76	95.76	1.18	0.80	0.84	1.00	
	22.0	95.61	95.61	2.20	1.92	2.21	4.87		21.0	95.81	98.16	1.60	1.54	1.78	2.85	2.4		22.0	95.72	95.72	1.22	0.76	0.80	0.98	
	23.0	95.56	95.56	2.25	1.77	2.04	4.60		22.0	95.71	98.17	1.70	1.54	1.78	3.03	4.2		23.0	95.56	95.56	1.38	0.68	0.72	0.99	
	24.0	95.56	95.56	2.25	1.84	2.12	4.77		23.0	95.61	98.18	1.80	1.39	1.61	2.90	4.2		24.0	95.59	95.59	1.35	0.53	0.57	0.77	
	25.0	95.66	95.66	2.15	1.88	2.17	4.66		24.0	95.60	98.18	1.81	1.35	1.57	2.83	4.2		25.0	95.64	95.64	1.30	0.44	0.50	0.65	
	26.0	95.81	95.81	2.00	1.39	1.61	3.22		25.0	95.71	98.19	1.70	1.19	1.38	2.35	4.2		26.0	95.84	95.84	1.10	0.54	0.58	0.64	
	27.0	95.96	95.96	1.85	0.57	0.68	1.26		26.0	95.88	98.15	1.53	0.50	0.60	0.92	2.4		27.0	95.97	95.97	0.97	0.16	0.24	0.20	
	28.0	96.11	96.11	1.70	-0.09	-0.14	-0.24		27.0	96.01	98.14	1.40	0.23	0.31	0.44	2.4		28.0	96.14	96.14	0.80	0.02	0.05	0.04	
	29.0	96.31	96.31	1.50	-0.07	-0.11	-0.16		28.0	96.19	98.12	1.22	0.05	0.08	0.10	2.4		29.0	96.25	96.25	0.69	0.00	0.01	0.01	
	30.0	96.81	96.81	1.00	-0.10	-0.16	-0.16		29.0	96.51	98.14	0.90	0.50	0.60	0.54	2.3		*30	96.25	96.25	0.69	0.00	0.01	0.01	
	31.0	97.11	97.11	0.70	-0.08	-0.12	-0.10		30.0	96.99	98.14	0.42	0.00	0.01	0.00	2.1		RWE 29.8	96.94	96.94	0.00	0.00	0.00	0.00	
	32.2	97.81	97.81	0.00	0.00	0.00	0.00		31.0	97.21	98.14	0.20	0.00	0.01	0.00	1.2									
									RWE 31.7	97.41	98.14	0.00	0.00	0.00	0.00	1.2									
									32.5	6.64	98.20					1.2									
									42.5	6.34	98.50					1.1									

Note: Velocity equation changed to reference correct velocity meter.

* = Velocity estimated



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Run                HGH                TRANSECT 1
IOC                1100000100001000101000
QARD  6.0
QARD  8.0
QARD 11.5
QARD 15.0
QARD 20.0
QARD 25.0
QARD 28.1
QARD 30.0
QARD 32.5
QARD 35.0
QARD 37.5
QARD 40.0
QARD 42.5
QARD 45.0
QARD 48.0
QARD 50.0
QARD 52.5
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
XSEC  0.0          0.0 1.0      95.41  0.00185
        0.0  1.0 99.5  5.0 98.8  7.4 97.6  8.2 95.9  9.0 95.8 10.0 95.8
        0.0 11.0 95.7 12.0 95.7 13.0 95.8 14.0 95.7 15.0 95.8 16.0 95.7
        0.0 17.0 95.7 18.0 95.6 19.0 95.6 20.0 95.6 21.0 95.5 22.0 95.5
        0.0 23.0 95.4 24.0 95.4 25.0 95.4 26.0 95.6 27.0 95.5 28.0 95.6
        0.0 29.0 95.8 30.0 96.5 30.5 97.5 31.1 97.6 42.9 98.4 48.9 98.4
NS      0.0          1.2          1.2          2.4          2.4          2.4          4.2
NS      0.0          5.2          5.4          5.4          5.4          5.4          5.4
NS      0.0          5.4          5.4          5.6          5.6          5.4          5.6
NS      0.0          5.8          5.6          5.6          8.5          5.6          5.2
NS      0.0          4.2 .14   1.2 .10   1.2 .12   1.2 .14   1.2          1.2
WSL     0.0          96.55          96.61          96.75          96.85          96.98          97.10
WSL     0.0          97.15          97.19          97.26          97.32          97.37          97.43
WSL     0.0          97.48          97.54          97.61          97.65          97.70          97.76
WSL     0.0          97.86          97.97          98.06          98.15          98.24          98.32
WSL     0.0          98.40          98.47          98.55          98.62          98.68          98.81
CAL1    0.0          97.61          48.0
VEL1    0.0          0.00 0.01-0.21-0.53-0.25 0.33 0.28 0.37 0.41 0.57
VEL1    0.0 1.02 1.02 0.96 0.93 0.89 1.28 2.52 2.66 2.39 2.30 1.61 0.99
VEL1    0.0 0.43-0.17-0.08 0.00
CAL2    0.0          97.13          28.1
VEL2    0.0
VEL2    0.0
VEL2    0.0
CAL3    0.0          96.80          11.5
VEL3    0.0
VEL3    0.0
VEL3    0.0
ENDJ
    
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Run	HGH												TRANSECT 2
IOC	1100000100001000101000												
QARD	6.0												
QARD	8.0												
QARD	11.5												
QARD	15.0												
QARD	20.0												
QARD	25.0												
QARD	28.1												
QARD	30.0												
QARD	32.5												
QARD	35.0												
QARD	37.5												
QARD	40.0												
QARD	42.5												
QARD	45.0												
QARD	48.0												
QARD	50.0												
QARD	52.5												
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												
XSEC	0.0	0.0	1.0	95.83	0.00185								
	0.0	1.0	99.1	4.0	98.7	10.0	98.1	10.8	97.7	11.5	97.1	12.5	96.6
	0.0	13.5	96.4	14.5	96.2	15.5	96.0	16.5	95.9	17.5	95.9	18.5	95.8
	0.0	19.5	95.9	20.0	95.8	20.5	95.8	21.0	95.9	21.5	95.9	22.0	95.9
	0.0	22.5	95.9	23.0	96.0	23.5	96.0	24.0	96.0	24.5	96.1	25.0	96.1
	0.0	25.5	96.2	26.0	96.2	26.5	96.2	27.0	96.2	27.5	96.2	28.0	96.3
	0.0	28.2	97.5	28.5	97.6	28.6	97.7	30.0	98.6	32.2	98.9		
NS	0.0	1.2	1.2	1.2	1.2	2.3	0.3	2.1	0.3	2.9			
NS	0.0	2.4	2.4	4.6	4.5	4.5	4.5						
NS	0.0	5.4	5.4	5.4	5.4	5.4	5.4						
NS	0.0	5.4	5.4	5.4	5.4	5.4	5.4						
NS	0.0	5.4	4.5	4.5	4.5	5.4	.06	5.4					
NS	0.0	.07	5.4	.08	5.4	1.2	1.2	1.2					
WSL	0.0	96.73	96.79	96.91	97.01	97.14	97.25						
WSL	0.0	97.30	97.34	97.39	97.45	97.51	97.56						
WSL	0.0	97.61	97.67	97.73	97.77	97.83	97.88						
WSL	0.0	97.98	98.08	98.17	98.26	98.35	98.43						
WSL	0.0	98.51	98.58	98.66	98.72	98.79	98.92						
CAL1	0.0	97.73	48.0										
VEL1	0.0	0.00	0.02	0.17	0.44	0.67	0.91	1.28	1.54	2.17			
VEL1	0.0	2.79	2.88	2.96	2.92	2.85	2.70	2.59	2.82	2.70	2.50	2.43	2.07
VEL1	0.0	2.09	2.02	2.18	2.18	2.31	0.11	0.08	0.08	0.00			
CAL2	0.0	97.28	28.1										
VEL2	0.0												
VEL2	0.0												
VEL2	0.0												
CAL3	0.0	96.90	11.5										
VEL3	0.0												
VEL3	0.0												

VEL3 0.0
ENDJ

Run HGH TRANSECT 3
 IOC 1100000100001000101000
 QARD 6.0
 QARD 8.0
 QARD 11.5
 QARD 15.0
 QARD 20.0
 QARD 25.0
 QARD 28.1
 QARD 30.0
 QARD 32.5
 QARD 35.0
 QARD 37.5
 QARD 40.0
 QARD 42.5
 QARD 45.0
 QARD 48.0
 QARD 50.0
 QARD 52.5
 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
 XSEC 0.0 0.0 1.0 95.83 0.00185
 0.0 1.0 99.9 6.7 97.8 7.2 96.7 8.0 96.2 9.0 96.2 10.0 96.1
 0.0 11.0 95.8 12.0 95.9 13.0 95.9 14.0 96.0 15.0 95.8 16.0 96.0
 0.0 17.0 96.0 18.0 95.8 19.0 95.7 20.0 95.8 21.0 95.8 22.0 95.6
 0.0 23.0 95.6 24.0 95.6 25.0 95.7 26.0 95.8 27.0 96.0 28.0 96.1
 0.0 29.0 96.3 30.0 96.8 31.0 97.1 32.2 97.8 32.5 98.2 42.5 98.5
 NS 0.0 1.1 1.1 2.3 2.3 2.3 2.3
 NS 0.0 2.3 3.2 4.2 4.2 4.2 2.4
 NS 0.0 2.4 2.4 2.4 2.4 2.4 4.2
 NS 0.0 4.2 4.2 4.2 2.4 2.4 .18 2.4
 NS 0.0 .20 2.3 .25 2.1 .25 1.2 1.2 1.2 1.1
 WSL 0.0 96.78 96.84 96.97 97.07 97.20 97.32
 WSL 0.0 97.37 97.41 97.47 97.53 97.58 97.64
 WSL 0.0 97.69 97.75 97.81 97.86 97.91 97.96
 WSL 0.0 98.07 98.17 98.26 98.35 98.44 98.52
 WSL 0.0 98.60 98.68 98.75 98.82 98.89 99.02
 CAL1 0.0 97.81 48.0
 VEL1 0.0 0.00-0.33-0.33-0.23-0.18-0.05 0.29 0.51 1.20 1.14 1.49
 VEL1 0.0 1.54 1.69 2.25 2.10 2.04 2.21 2.04 2.12 2.17 1.61 0.68-0.14
 VEL1 0.0-0.11-0.16-0.12 0.00
 CAL2 0.0 97.41 28.1
 VEL2 0.0
 VEL2 0.0
 VEL2 0.0
 CAL3 0.0 96.94 11.5
 VEL3 0.0
 VEL3 0.0
 VEL3 0.0
 ENDJ

Stream: Long Creek
 Site: SY 8
 Date: 5/13/2004
 Habitat: Riffle

Date: 6/25/2004
 Habitat: Riffle

Date: 8/18/2004
 Habitat: Riffle

Flow: Mid

Flow: Low

(1) Level Loop Survey (BM & HP)

BM/HP (ft)	BS (ft)	HI (ft)	FS (ft)	Elev (ft)
BM	4.13	104.13		100.00
HP1			5.32	98.81
HP2			5.32	98.81
HP3			5.70	98.43
TP		104.02		
HP2	5.59		5.20	98.82
HP1			5.21	98.81
BM			4.02	100.00

Comment:

(1) Level Loop Survey

BM/HP (ft)	BS (ft)	HI (ft)	FS (ft)	Elev (ft)
BM	4.26	104.26		100.00
HP2			5.45	98.81
HP1			5.45	98.81
TP		104.07		
HP3	5.26		5.65	98.42
BM			4.07	100.00
TP	4.38	104.38		
BM			5.56	98.82
HP2			5.56	98.82
HP1			5.48	98.43
HP3	5.09	103.91		

Comment:

(1) Level Loop Survey

BM/HP (ft)	BS (ft)	HI (ft)	FS (ft)	Elev (ft)
BM	2.50	102.50		100.00
HP1			3.69	98.81
HP2			3.69	98.81
HP3			4.07	98.43
TP		102.54		
HP3	4.11		3.73	98.81
HP2			3.73	98.81
HP1			2.54	100.00
BM				

Comment: BM (riffle)=101.02 in pool loop datum

(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	104.02	7.61	0.00	96.41	96.46	50.8
1-R	0	0	104.02	7.51	0.00	96.51	96.56	48.4
2-L	21	37	104.02	7.49	0.00	96.53	96.58	52.3
2-R	52	82	104.02	7.44	0.00	96.66	96.66	48.9
3-L	66	82	104.02	7.36	0.00	96.66	96.66	48.9
3-R	98	98						

Note: 60' d/s of TR1 wse FS=7.69, bed FS=10.13
 WSE slope = 0.303%

(3) Meter and propeller ID for Velocity Correction

Meter ID: 4099
 Propeller ID: 1a

(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	103.90	7.82		96.08	96.09	29.2
1-R	0	0	103.90	7.81		96.09	96.16	28.8
2-L	21	37	103.90	7.76		96.14	96.17	28.4
2-R	52	82	102.16	5.91		96.25	96.24	27.8
3-L	66	98		5.92				
3-R	98	98						

Note: WSE slope = 0.242%

(3) Meter and propeller ID for Velocity Correction

Meter ID: 3602
 Propeller ID: 3A

(2) Water Surface Elevation (WSE) Survey

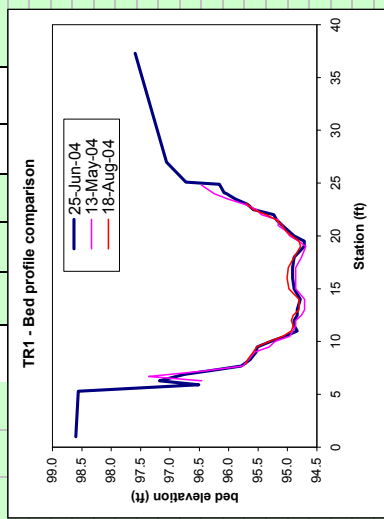
TR	River Station		HI (ft)	FS (ft)	Rod (ft)	WSE (ft)	Ave WSE (ft)	Q (cfs)
	L/R bank (ft)	Ave (ft)						
1-L	0	0	102.54	6.85		95.69	95.71	12
1-R	0	0	102.54	6.82		95.72	95.83	12.6
2-L	21	37	102.54	6.73		95.81	95.85	11.4
2-R	52	82	102.54	6.69		95.95	95.95	11.4
3-L	66	98		6.59				
3-R	98	98						

Note: WSE slope = 0.371%

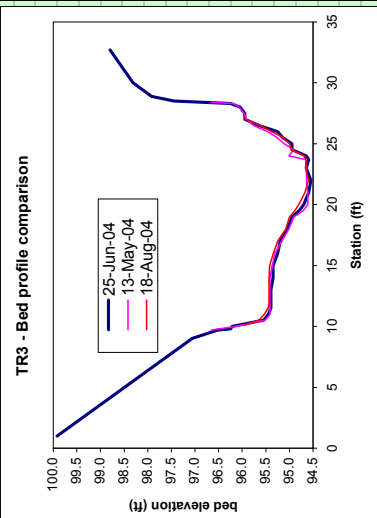
(3) Meter and propeller ID for Velocity Correction

Meter ID: 5750
 Propeller ID: 2a

Stream: Long Creek	13-May-04										25-Jun-04										18-Aug-04																	
	Site: SY_8	Transsect: I	Habitat: Rifle	Survey	HI	Q	Date	Sta (ft)	FS (ft)	Ground (ft)	Depth (ft)	V _{0.2m/s} (ft/s)	V _{0.8} Ave	q (cfs)	substrate	Sta (ft)	FS (ft)	Ground (ft)	Depth (ft)	V _{0.2m/s} (ft/s)	V _{0.8} Ave	q (cfs)	substrate	Sta (ft)	FS (ft)	Ground (ft)	Depth (ft)	V _{0.2m/s} (ft/s)	V _{0.8} Ave	Angle (deg)	q (cfs)	substrate						
				RWP	6.3	96.46	0.00	0.00																														
				RWE	6.7	97.36	-0.90																															
					7.2	96.46	0.00	0.00																														
					7.7	95.76	0.70	0.19																														
					8.3	95.66	0.80	0.53																														
					9.0	95.56	0.90	0.41																														
					10.0	95.21	1.25	2.74																														
					10.5	94.96	1.50	2.46																														
					11.0	94.91	1.55	2.85																														
					11.5	94.86	1.60	3.03																														
					12.0	94.86	1.60	3.12																														
					12.5	94.76	1.70	3.04																														
					13.0	94.71	1.75	2.73																														
					14.0	94.71	1.75	2.70																														
					15.0	94.86	1.60	2.81																														
					16.0	94.86	1.60	2.61																														
					17.0	94.86	1.60	2.67																														
					18.0	94.76	1.70	2.60																														
					19.0	94.69	1.77	2.50																														
					19.5	94.81	1.65	2.00																														
					20.0	94.96	1.50	1.70																														
					20.5	95.03	1.43	1.60																														
					21.0	95.16	1.30	1.06																														
					21.5	95.16	1.30	0.45																														
					22.0	95.44	1.02	-0.01																														
					22.5	95.53	0.93	-0.01																														
					23.0	95.73	0.73	-0.05																														
					23.5	96.01	0.45	-0.16																														
					24.0	96.24	0.22	-0.14																														
					LWE	24.8	96.46	0.00	0.00																													
					LWP																																	



Stream: Long Creek		13-May-04						25-Jun-04						18-Aug-04											
Site: SY_8	Transsect: 3	Habitat: Rifle	Survey	Date	HI (ft)	Q (cfs)	Sta (ft)	FS (ft)	Ground (ft)	Depth (ft)	V _{0.20/6} (ft/s)	V _{0.8} (ft/s)	Ave (cfs)	q (cfs)	substrate	Sta (ft)	FS (ft)	Ground (ft)	Depth (ft)	V _{0.20/6} (ft/s)	V _{0.8} (ft/s)	Ave (cfs)	q (cfs)	substrate	
			RWP		9.7		1.0	4.10	99.92						1.1										
			RWE		10.0	0.00	9.0	5.10	97.06						1.1										
					10.5	1.15	10.0	5.64	96.52	0.00	0.00	0.00	0.00	0.00	1.2										
					11.0	1.25	11.0	9.22	96.22	0.03	0.01	0.03	0.00	0.00	9.1						0.00	0.00	0.00	0.00	0.00
					11.5	2.02	11.0	95.55	96.25	0.70	0.57	0.59	0.21	4.2						0.59	0.23	0.03	0.03	0.00	0.00
					12.0	2.11	11.5	95.45	96.25	0.80	1.35	1.38	0.55	4.2						0.59	0.12	0.03	0.00	0.00	0.00
					13.0	2.29	12.0	95.40	96.25	0.85	1.64	1.53	0.65	4.2						0.66	0.17	0.03	0.00	0.00	0.00
					14.0	2.29	13.0	95.40	96.25	0.85	1.74	1.67	1.06	4.5						1.05	0.41	0.03	0.00	0.00	0.00
					15.0	2.49	14.0	95.35	96.25	0.90	1.81	1.77	1.50	4.5						1.09	0.57	0.03	0.00	0.00	0.00
					16.0	2.73	15.0	95.35	96.25	0.90	1.55	1.84	1.65	4.5						1.00	0.52	0.03	0.00	0.00	0.00
					17.0	2.73	16.0	95.25	96.25	1.00	1.93	1.96	1.96	5.4						1.15	0.61	0.03	0.00	0.00	0.00
					18.0	4.84	17.0	95.20	96.25	1.05	1.94	1.97	2.07	5.4						1.14	0.69	0.03	0.00	0.00	0.00
					19.0	4.13	18.0	95.05	96.25	1.20	2.17	2.20	2.64	5.4						1.17	1.02	0.03	0.00	0.00	0.00
					19.5	3.01	19.0	94.95	96.25	1.30	1.99	2.02	1.97	5.4						1.31	0.93	0.03	0.00	0.00	0.00
					20.0	3.02	20.0	94.80	96.25	1.45	2.32	2.35	1.70	5.4						1.28	0.89	0.03	0.00	0.00	0.00
					21.0	2.56	21.0	94.70	96.25	1.55	2.03	2.06	2.39	5.4						1.24	1.07	0.03	0.00	0.00	0.00
					22.0	2.00	22.0	94.60	96.25	2.00	1.63	1.92	3.16	5.8						1.31	0.93	0.03	0.00	0.00	0.00
					23.0	0.86	23.0	94.55	96.25	1.70	1.63	1.66	2.82	5.4						1.24	1.07	0.03	0.00	0.00	0.00
					23.7	0.33	23.7	94.65	96.25	1.60	1.06	1.09	1.48	4.5						1.25	0.66	0.03	0.00	0.00	0.00
					24.0	0.35	24.0	94.65	96.25	1.60	0.68	0.70	0.58	8.4						1.25	0.66	0.03	0.00	0.00	0.00
					24.5	0.29	24.5	94.95	96.25	1.30	0.47	0.49	0.31	2.8						1.24	1.07	0.03	0.00	0.00	0.00
					25.0	0.09	25.0	94.95	96.25	1.30	0.15	0.20	0.13	2.8						1.24	1.07	0.03	0.00	0.00	0.00
					25.5	0.09	25.5	95.15	96.25	1.10	0.04	0.12	0.06	2.3						1.13	1.44	0.03	0.00	0.00	0.00
					26.0	-0.14	26.0	95.25	96.25	1.00	-0.03	0.16	0.11	2.8						1.31	0.93	0.03	0.00	0.00	0.00
					26.5	-0.17	26.5	95.65	96.25	0.60	-0.07	0.12	0.06	2.3						1.25	0.66	0.03	0.00	0.00	0.00
					27.0	-0.11	27.0	95.91	96.25	0.75	-0.11	-0.09	-0.04	2.3						1.25	0.66	0.03	0.00	0.00	0.00
					27.5	-0.25	27.5	95.95	96.25	0.30	0.01	0.03	0.00	2.9						1.25	0.66	0.03	0.00	0.00	0.00
					28.0	-0.12	28.0	96.05	96.25	0.30	0.01	0.03	0.00	2.9						1.25	0.66	0.03	0.00	0.00	0.00
					28.3	-0.08	28.3	96.05	96.25	0.20	0.01	0.03	0.00	2.9						1.25	0.66	0.03	0.00	0.00	0.00
					28.4	0.00	28.4	96.25	96.25	0.00	0.00	0.00	0.00	2.1						1.25	0.66	0.03	0.00	0.00	0.00
					LWP		LWP	28.3	4.71	97.45				1.1						1.31	0.93	0.03	0.00	0.00	0.00
								28.5	4.24	97.92				1.1						1.31	0.93	0.03	0.00	0.00	0.00
								30.0	3.85	98.31				1.1						1.31	0.93	0.03	0.00	0.00	0.00
								32.7	3.36	98.80				1.1						1.31	0.93	0.03	0.00	0.00	0.00



Rifle

HGH

TRANSECT 1

IOC 1101100000001000101000

QARD 6.0
QARD 8.0
QARD 11.5
QARD 15.0
QARD 20.0
QARD 25.0
QARD 28.1
QARD 30.0
QARD 32.5
QARD 35.0
QARD 37.5
QARD 40.0
QARD 42.5
QARD 45.0
QARD 48.0
QARD 50.0
QARD 52.5
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

XSEC 0.0 0.0 1.0 95.10 0.00303
0.0 1.0 98.6 5.3 98.6 5.9 96.5 6.3 96.5 6.7 97.4 7.2 96.5
0.0 7.7 95.8 8.3 95.7 9.0 95.6 9.5 95.3 10.0 95.2 10.5 95.0
0.0 11.0 94.9 11.5 94.9 12.0 94.9 12.5 94.8 13.0 94.7 14.0 94.7
0.0 15.0 94.9 16.0 94.9 17.0 94.9 18.0 94.8 19.0 94.7 19.5 94.8
0.0 20.0 95.0 20.5 95.0 21.0 95.2 21.5 95.2 22.0 95.4 22.5 95.5
0.0 23.0 95.7 23.5 96.0 24.0 96.2 24.8 96.5 24.9 96.2 25.1 96.7
0.0 27.0 97.1 37.3 97.6

NS 0.0 1.1 1.1 2.3 1.1 1.1 2.2
NS 0.0 2.1 .07 2.8 .070 2.8 8.2 8.2 8.4
NS 0.0 8.4 8.4 8.4 8.4 8.4 8.4
NS 0.0 8.4 8.4 8.4 8.4 8.5 8.5
NS 0.0 5.4 4.2 4.2 2.4 2.1 2.9
NS 0.0 2.9 2.9 2.9 2.1 2.1 1.1
NS 0.0 1.1 1.1

CAL1 0.0 96.46 48.0
VEL1 0.0 0.00 0.00 0.28 0.58 0.48 2.18 2.83 2.55
VEL1 0.0 2.94 3.13 3.22 3.14 2.82 2.79 2.90 2.70 2.76 2.69 2.59 2.08
VEL1 0.0 1.77 1.67 1.11 0.52-0.02-0.02-0.11-0.25-0.23 0.00

VEL1 0.0
CAL2 0.0 96.09 28.1
VEL2 0.0
VEL2 0.0
VEL2 0.0
VEL2 0.0
CAL3 0.0 95.71 11.5
VEL3 0.0
VEL3 0.0
VEL3 0.0
VEL3 0.0
ENDJ

Rifle HGH TRANSECT 2
 IOC 1100000100001000101000
 QARD 6.0
 QARD 8.0
 QARD 11.5
 QARD 15.0
 QARD 20.0
 QARD 25.0
 QARD 28.1
 QARD 30.0
 QARD 32.5
 QARD 35.0
 QARD 37.5
 QARD 40.0
 QARD 42.5
 QARD 45.0
 QARD 48.0
 QARD 50.0
 QARD 52.5
 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
 XSEC 0.0 0.0 1.0 95.10 0.00303
 0.0 -2.0 98.8 5.0 97.2 7.0 97.1 10.0 96.7 10.3 96.6 10.6 96.3
 0.0 11.0 95.7 11.5 95.4 12.0 95.4 12.5 95.3 13.0 95.4 13.5 95.3
 0.0 14.0 95.2 15.0 95.2 16.0 95.1 17.0 95.1 18.0 95.1 19.0 95.1
 0.0 20.0 95.1 21.0 95.2 22.0 95.3 23.0 95.5 24.0 95.7 24.5 95.7
 0.0 25.0 95.8 25.4 95.9 25.5 96.4 26.1 96.6 26.5 96.7 29.5 96.8
 0.0 32.0 97.4 37.4 97.8
 NS 0.0 1.1 1.1 1.1 1.1 1.1 9.2
 NS 0.0 0.1 2.9 2.9 2.5 5.4 5.4
 NS 0.0 5.8 5.4 5.4 5.4 5.4
 NS 0.0 5.4 4.5 4.5 4.5 4.5
 NS 0.0 2.9 2.9 .04 1.2 .04 1.1 .04 1.1 .06 1.1
 NS 0.0 1.1 1.1
 WSL 0.0 95.70 95.76 95.86 95.94 96.05 96.14
 WSL 0.0 96.19 96.23 96.28 96.32 96.37 96.41
 WSL 0.0 96.45 96.48 96.53 96.56 96.60 96.64
 WSL 0.0 96.71 96.78 96.85 96.91 96.97 97.03
 WSL 0.0 97.09 97.15 97.21 97.26 97.32 97.43
 CAL1 0.0 96.56 48.0
 VEL1 0.0 0.00 0.34 0.02 0.45 1.11 1.89 2.54 2.68
 VEL1 0.0 2.86 2.46 2.63 3.06 3.21 3.25 2.91 2.98 2.79 2.96 2.73 2.18
 VEL1 0.0 1.68 1.40 0.18 0.00
 CAL2 0.0 96.16 28.1
 VEL2 0.0
 VEL2 0.0
 VEL2 0.0
 CAL3 0.0 95.83 11.5
 VEL3 0.0
 VEL3 0.0
 VEL3 0.0
 ENDJ

Rifle HGH TRANSECT 3
 IOC 1100000100001000101000
 QARD 6.0
 QARD 8.0
 QARD 11.5
 QARD 15.0
 QARD 20.0
 QARD 25.0
 QARD 28.1
 QARD 30.0
 QARD 32.5
 QARD 35.0
 QARD 37.5
 QARD 40.0
 QARD 42.5
 QARD 45.0
 QARD 48.0
 QARD 50.0
 QARD 52.5
 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
 XSEC 0.0 0.0 1.0 95.10 0.00303
 0.0 1.0 99.9 9.0 97.1 9.7 96.7 10.0 96.1 10.5 95.5 11.0 95.4
 0.0 11.5 95.4 12.0 95.4 13.0 95.4 14.0 95.4 15.0 95.4 16.0 95.3
 0.0 17.0 95.2 18.0 95.0 19.0 94.9 19.5 94.7 20.0 94.6 21.0 94.6
 0.0 22.0 94.6 23.0 94.6 23.7 94.7 24.0 95.0 24.5 94.9 25.0 95.1
 0.0 25.5 95.3 26.0 95.5 26.5 95.8 27.0 95.9 27.5 96.0 28.0 96.1
 0.0 28.3 96.2 28.4 96.7 28.5 97.4 28.9 97.9 30.0 98.3 32.7 98.8
 NS 0.0 0.30 1.1 .05 1.1 0.05 1.1 0.05 9.1 4.2 4.2
 NS 0.0 4.2 4.5 4.5 4.5 4.5 4.5 5.4
 NS 0.0 5.4 5.4 5.4 5.4 5.4 5.4 5.8
 NS 0.0 5.4 4.5 8.4 2.8 2.8 2.8
 NS 0.0 2.3 2.3 2.3 2.9 2.9 2.9
 NS 0.0 2.1 1.1 1.1 1.1 1.1 1.1
 WSL 0.0 95.76 95.82 95.92 96.01 96.12 96.22
 WSL 0.0 96.28 96.32 96.37 96.41 96.46 96.51
 WSL 0.0 96.55 96.59 96.64 96.67 96.71 96.75
 WSL 0.0 96.83 96.90 96.97 97.03 97.10 97.16
 WSL 0.0 97.22 97.28 97.34 97.39 97.45 97.55
 CAL1 0.0 96.66 48.0
 VEL1 0.0 0.00 0.25 1.30 2.00 2.10 2.19 2.23 2.37 2.58 2.82
 VEL1 0.0 2.82 2.93 3.15 3.09 3.12 2.65 2.08 1.25 0.91 0.43 0.38 0.18
 VEL1 0.0 0.13-0.24-0.26-0.20-0.34-0.21-0.18 0.00
 CAL2 0.0 96.25 28.1
 VEL2 0.0
 VEL2 0.0
 VEL2 0.0
 CAL3 0.0 95.95 11.5
 VEL3 0.0
 VEL3 0.0
 VEL3 0.0
 ENDJ