

12-8-2009

Ex. 279-US-427

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Stream: Sycan River  
 Site: SY-3 (Sycan River at TP meadows)

Date: 9/21/90

Habitat: Run

Flow: Low

(1) Level Loop Survey (BM & HP)

BM/HP (ft)	BS (ft)	HI (ft)	FS (ft)	Elev (ft)
BM	3.01	103.01		
HP1			5.56	97.45
HP2			4.75	98.26
HP3			4.89	98.12
TP				
HP3	4.79	102.91		
HP2			4.65	98.26
HP1			5.46	97.45
BM			2.91	100.00

Comment:

Date: 4/14/91

Habitat: Run

Flow: not used in calibration

(1) Level Loop Survey

BM/HP (ft)	BS (ft)	HI (ft)	FS (ft)	Elev (ft)
BM	2.43	102.43		
HP1			4.96	97.47
HP2			4.11	98.32
HP3			4.23	98.20
TP				
HP3	4.28	102.48		
HP2			4.16	98.32
HP1			5.01	97.47
BM			2.48	100.00

Comment:

Date: 5/11/91

Habitat: Run

Flow: Mid

(1) Level Loop Survey

BM/HP (ft)	BS (ft)	HI (ft)	FS (ft)	Elev (ft)
BM	3.84	103.84		
HP1			3.23	100.61
HP2			0.44	103.40
HP3			0.44	103.40
TP				
HP3	0.46	103.86		
HP2			0.46	103.40
HP1			3.25	100.61
BM			3.86	100.00

Comment:

(2) Water Surface Elevation (WSE) Survey

	L/R WSE (ft)	Sta (ft)	HI (ft)	FS (ft)	Rod (ft)	WSE (ft)	Ave WSE (ft)	Q (cfs)
TR1	LWE	132.9	102.92	6.90	0.00	96.02	96.03	3.9
	RWE			6.89	0.00	96.03		
TR2	LWE	221.5	102.91	6.87	0.00	96.04	96.04	3.0
	RWE			6.87	0.00	96.04		
TR3	LWE	310.1	102.91	6.86	0.00	96.05	96.05	3.6
	RWE			6.86	0.00	96.05		

Note:

WSE slope= 0.014%

Ave Q= 3.5

(2) Water Surface Elevation (WSE) Survey

	L/R WSE (ft)	Sta (ft)	HI (ft)	FS (ft)	Rod (ft)	WSE (ft)	Ave WSE (ft)	Q (cfs)
TR1	LWE	132.9	102.48	6.31	0.00	96.17	96.17	7.6
	RWE			6.31	0.00	96.17		
TR2	LWE	221.5	102.48	6.30	0.00	96.18	96.18	7.5
	RWE			6.30	0.00	96.18		
TR3	LWE	310.1	102.48	6.29	0.00	96.19	96.19	6.0
	RWE			6.30	0.00	96.18		

Note:

WSE slope= 0.008%

Ave Q= 7.0

(2) Water Surface Elevation (WSE) Survey

HI=

	L/R WSE (ft)	Sta (ft)	HI (ft)	FS (ft)	Rod (ft)	WSE (ft)	Ave WSE (ft)	Q (cfs)
TR1	LWE	132.9	103.86	7.29	0.00	96.57	96.57	37.7
	RWE			7.29	0.00	96.57		
TR2	LWE	221.5	103.86	7.27	0.00	96.59	96.59	34.4
	RWE			7.27	0.00	96.59		
TR3	LWE	310.1	103.86	7.24	0.00	96.62	96.63	36.2
	RWE			7.23	0.00	96.63		

Note:

WSE slope= 0.031%

Ave Q= 36.1

Date: 5/15/93  
 Habitat: Run Flow: High

(1) Level Loop Survey						
BM/HP (ft)	BS (ft)	HI (ft)	FS (ft)	Elev (ft)		
BM	10.64	110.64				
HP1			10.04	100.60		
HP2			7.25	103.39		
HP3			7.24	103.40		
TP						
HP3	7.06	110.46				
HP2			7.06	103.40		
HP1			9.86	100.60		
BM			10.47	99.99		

Comment:

(2) Water Surface Elevation (WSE) Survey

	L/R	Sta	HI (ft)	FS (ft)	Rod (ft)	Ave	
						WSE (ft)	WSE (ft)
TR1	LWE	132.9	110.46	12.16	0.00	98.30	98.29
	RWE			12.18	0.00	98.28	643.3
TR2	LWE	221.5	110.46	12.14	0.00	98.32	98.34
	RWE			12.10	0.00	98.36	
TR3	LWE	310.1	110.46	11.92	0.00	98.54	98.47
	RWE			12.06	0.00	98.40	

Ave Q= 643.3

Note: WSE slope= 0.102%

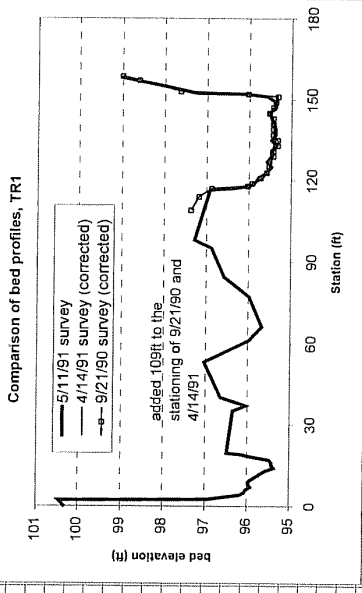




Sta (ft)	FS (ft)	15-May-93			Depth (ft)	15-May-93			FS (ft)	Ground (ft)	q (cfs)	substrate
		Vel (ft/s)	V <sub>0.8</sub>	Ave		Vel (ft/s)	V <sub>0.8</sub>	Ave				
LWE 1.6	96.79	1.50			0.00	0.00	0.00	10.4	97.37			
2.0	96.49	1.80			1.40	1.12	1.12	11.5	97.18			
3.0	95.99	2.30			1.40	2.12	2.12	12.0	96.88			
4.0	95.79	2.50			3.00	1.42	2.47	13.0	96.03			
5.0	95.79	2.50			3.20	2.86	3.96	18.0	95.93			
6.0	95.89	2.40			3.20	3.51	3.61	23.0	95.73			
7.0	95.89	2.40			3.20	0.63	2.79	28.0	123.0			
8.0	95.79	2.50			2.80	0.95	2.68	33.0	125.0			
9.0	95.69	2.60			2.80	1.02	2.14	33.0	127.0			
10.0	95.54	2.75			3.00	3.50	3.42	48.0	131.0			
11.0	95.49	2.80			3.00	2.25	3.28	43.0	133.0			
12.0	95.59	2.90			3.20	2.08	3.05	53.0	135.0			
13.0	95.29	3.00			3.20	2.97	2.58	58.0	137.0			
14.0	95.19	3.10			2.70	2.25	2.93	63.0	139.0			
15.0	95.09	3.20			3.00	2.13	2.73	68.0	141.0			
16.0	95.19	3.10			3.20	2.73	2.43	73.0	143.0			
17.0	95.29	3.00			1.80	2.44	2.44	78.0	145.0			
18.0	95.79	2.50			1.90	3.65	3.65	83.0	147.0			
19.0	95.89	2.40			1.30	3.78	3.78	88.0	149.0			
20.0	96.39	1.90			1.30	3.32	3.32	93.0	151.0			
21.0	96.79	1.50			1.10	2.85	2.87	98.0	152.2			
22.0	96.29	2.00			0.50	1.56	1.56	103.0				
23.0	96.29	2.00			0.50	1.52	3.80	108.0				
24.0	96.29	2.00			0.25	0.85	0.85	113.0				
25.0	96.14	2.15			0.00	0.00	0.00	118.0				
26.0	96.29	2.00						122.4				
28.0	96.19	2.10										
30.0	96.29	2.00										
31.0	96.39	1.90										
33.0	96.29	2.00										
34.0	96.29	2.00										
35.0	96.19	2.10										
36.0	96.04	2.25										
37.0	95.99	2.30										
38.0	96.09	2.20										
39.0	96.29	2.00										
40.0	96.49	1.80										
41.0	96.64	1.65										
43.0	96.79	1.50										
45.0	96.64	1.65										
49.0	96.69	1.60										
53.0	96.99	1.30										
56.0	96.59	1.70										
59.0	96.09	2.20										
68.0	95.69	2.60										
73.0	95.79	2.50										
76.0	95.69	2.60										
79.0	95.79	2.50										
82.0	96.09	2.20										
85.0	96.39	1.90										
88.0	96.59	1.70										
91.0	96.39	1.70										
94.0	96.79	1.50										
97.0	97.19	1.10										
100.0	97.29	1.00										
106.0	97.29	1.00										
109.0	97.29	1.00										
116.0	96.99	1.30										
117.0	96.19	2.10										
120.0	95.59	2.70										
123.0	95.34	2.95										
127.0	95.19	3.10										
132.0	95.09	3.20										
135.0	95.19	3.10										
139.0	95.24	3.05										
149.0	95.34	2.95										
150.0	95.29	3.00										

Profile survey only

Velocity-depth only, but not at TR-1



15-May-93										15-May-93									
Sta (ft)	FS (ft)	Ground (ft)	Depth (ft)	Vel (ft/s)		q (cfs)	substrate	Sta (ft)	FS (ft)	Ground (ft)	Depth (ft)	Vel (ft/s)		q (cfs)	substrate	corrected 9/21/90 Ground (ft)	corrected 4/14/91 Ground (ft)		
				V <sub>0.206</sub>	V <sub>0.8</sub>							V <sub>0.206</sub>	V <sub>0.8</sub>						
151.0	95.48	95.48	2.81																
153.0	97.34	97.34	0.95																
154.0	97.64	97.64	0.65																
155.0	98.01	98.01	0.28																
155.8	98.29	98.29	0.00																
RWP	157.7																		







Stream: Sycan River		21-Sep-90										14-Apr-91										11-May-91									
Site: SY-3		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: 3		(ft)	(ft)	(ft)	(ft)	V <sub>0.2/0.6</sub>	V <sub>0.8</sub>	Ave	(ft)	(ft)	(ft)	(ft)	V <sub>0.2/0.6</sub>	V <sub>0.8</sub>	Ave	(ft)	(ft)	(ft)	(ft)	V <sub>0.2/0.6</sub>	V <sub>0.8</sub>	Ave	(ft)								
Habitat: Run		0.0	5.07	97.84					17.0		96.19	0.00	0.00	0.00	0.00	17.0		96.19	0.00	0.00	0.00	0.00	17.0								
		9.0	5.64	97.27					18.0		96.14	0.05	0.19	0.19	0.01	18.0		96.14	0.05	0.19	0.19	0.01	18.0								
		15.0	6.42	96.49					19.0		95.94	0.25	0.22	0.22	0.06	19.0		95.94	0.25	0.22	0.22	0.06	19.0								
		18.0	6.79	96.12					20.0		95.84	0.35	0.10	0.10	0.04	20.0		95.84	0.35	0.10	0.10	0.04	20.0								
		18.5	6.80	96.11	0.00	0.00			21.0		95.74	0.45	0.63	0.63	0.28	21.0		95.74	0.45	0.63	0.63	0.28	21.0								
		19.0		95.95	0.10	0.00			22.0		95.64	0.55	0.68	0.68	0.37	22.0		95.64	0.55	0.68	0.68	0.37	22.0								
		20.0		95.75	0.30	0.18			23.0		95.49	0.70	0.77	0.77	0.54	23.0		95.49	0.70	0.77	0.77	0.54	23.0								
		21.0		95.70	0.55	0.60			24.0		95.34	0.85	0.85	0.83	0.71	24.0		95.34	0.85	0.85	0.83	0.71	24.0								
		22.0		95.60	0.45	0.53			25.0		95.24	0.95	0.94	0.94	0.89	25.0		95.24	0.95	0.94	0.94	0.89	25.0								
		24.0		95.35	0.70	0.52			26.0		95.14	1.05	0.74	0.74	0.78	26.0		95.14	1.05	0.74	0.74	0.78	26.0								
		25.0		95.25	0.80	0.53			27.0		95.19	1.00	0.40	0.40	0.40	27.0		95.19	1.00	0.40	0.40	0.40	27.0								
		26.0		95.15	0.90	0.52			28.0		95.09	1.00	0.51	0.51	0.51	28.0		95.09	1.00	0.51	0.51	0.51	28.0								
		27.0		95.15	0.90	0.64			29.0		95.09	1.10	0.33	0.33	0.36	29.0		95.09	1.10	0.33	0.33	0.36	29.0								
		28.0		95.65	0.40	0.44			30.0		95.04	1.15	0.09	0.09	0.10	30.0		95.04	1.15	0.09	0.09	0.10	30.0								
		29.0		95.10	0.95	0.29			31.0		95.04	0.85	0.09	0.09	0.08	31.0		95.04	0.85	0.09	0.09	0.08	31.0								
		30.0		94.85	1.20	0.46			32.0		95.49	0.70	0.09	0.09	0.06	32.0		95.49	0.70	0.09	0.09	0.06	32.0								
		31.0		95.05	1.00	0.02			33.0		95.49	0.70	0.09	0.09	0.06	33.0		95.49	0.70	0.09	0.09	0.06	33.0								
		32.0		95.15	0.90	0.08			34.0		95.89	0.30	0.07	0.07	0.02	34.0		95.89	0.30	0.07	0.07	0.02	34.0								
		33.0		95.55	0.30	0.17			35.0		96.14	0.05	0.00	0.00	0.00	35.0		96.14	0.05	0.00	0.00	0.00	35.0								
		34.0		95.65	0.40	0.00			36.1		96.19	0.00	0.00	0.00	0.00	36.1		96.19	0.00	0.00	0.00	0.00	36.1								
		RWE	36.0	6.86	96.05	0.00	0.00																								
		RWP	43.0	2.72	100.19																										



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RUN                                MID                                TRANSECT 1
IOC                                1101100100001000101000
QARD 3.5
QARD 5.0
QARD 8.0
QARD 12.0
QARD 20.0
QARD 30.0
QARD 36.1
QARD 50.0
QARD 60.0
QARD 70.0
QARD 80.0
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 200.0
QARD 220.0
QARD 250.0
QARD 300.0
QARD 350.0
QARD 400.0
QARD 500.0
QARD 600.0
QARD 643.3
XSEC1000.0      0.00 1.0      95.37  0.00031
1000.0  0.0100.3  2.0100.5  2.5 96.9  4.1 96.2  5.0 96.1  6.0 96.0
1000.0  7.0 95.9  8.0 96.0  9.0 96.0 10.0 95.9 11.0 95.8 12.0 95.7
1000.0 13.0 95.6 14.0 95.4 15.0 95.4 16.0 95.4 17.0 95.5 18.0 95.9
1000.0 19.0 96.2 19.5 96.5 35.0 96.3 37.0 96.0 40.0 96.6 53.0 97.0
1000.0 56.5 96.6 61.0 96.0 66.0 95.7 77.0 96.0 84.3 96.6 95.0 96.9
1000.0 98.0 97.3116.5 96.9117.0 96.4118.0 96.0119.0 95.9121.0 95.8
1000.0123.0 95.6125.0 95.5127.0 95.6129.0 95.5131.0 95.5133.0 95.4
1000.0135.0 95.5137.0 95.4139.0 95.4141.0 95.4143.0 95.5145.0 95.5
1000.0147.0 95.4149.0 95.4151.0 95.6152.0 96.1152.2 97.2155.0 98.1
1000.0157.9 99.0
NS 1000.0      1.1      1.1      1.1      1.1 0.2  1.1 0.10  9.2
NS 1000.0 0.08  9.2 0.07  9.2 0.06  4.9 0.05  4.9 0.04  4.9 0.04  4.9
NS 1000.0 0.04  4.9 0.04  5.3 0.04  5.3 0.04  5.3 0.04  5.3 0.04  9.3
NS 1000.0 0.04  1.1 0.04  1.1 0.08  1.1 0.09  1.1 0.09  1.1 0.09  1.1
NS 1000.0 0.10  1.1 0.11  1.1 0.12  1.1 0.13  1.1 0.14  1.1 0.14  1.1
NS 1000.0 0.13  1.1 0.10  1.1 0.10  1.1 0.09  1.1 0.08  1.2 0.06  5.2
NS 1000.0      5.2      5.2 .025  5.2 .028  5.2 .028  5.2 .032  5.2
NS 1000.0      5.2      5.2      5.2      5.2      5.2      5.2
NS 1000.0      2.2      2.2      2.2      2.2      1.2      1.1      1.1
NS 1000.0      1.1
WSL 1000.0 96.03  96.08  96.16  96.24  96.39  96.53
WSL 1000.0 96.57  96.71  96.80  96.88  96.95  97.02
WSL 1000.0 97.07  97.12  97.17  97.22  97.26  97.30
WSL 1000.0 97.33  97.36  97.39  97.45  97.50  97.58
WSL 1000.0 97.69  97.80  97.89  98.07  98.23  98.29
CAL11000.0 96.57  36.1
VEL11000.0      0.00 0.01  0.40  0.65  0.60  1.15  1.50  1.80  1.80
VEL11000.0 2.00 1.90  2.00  1.80  1.65  0.80  0.00
VEL11000.0 0.00 0.01  0.01  0.01  0.00      0.05  0.40  0.50  0.85
VEL11000.0 0.65 0.95  1.20  1.10  1.20  1.00  0.90  0.85  0.90  0.70  0.55  0.65
VEL11000.0 0.50 0.40  0.15  0.00
CAL21000.0 96.03  3.5
VEL21000.0
VEL21000.0
VEL21000.0
VEL21000.0
VEL21000.0
CAL31000.0 98.29  643.3
VEL31000.0
VEL31000.0
VEL31000.0
VEL31000.0
VEL31000.0
ENDJ

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RUN                                MID                                TRANSECT 2
IOC      1101100100001000101000
QARD    3.5
QARD    5.0
QARD    8.0
QARD   12.0
QARD   20.0
QARD   30.0
QARD   36.1
QARD   50.0
QARD   60.0
QARD   70.0
QARD   80.0
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  200.0
QARD  220.0
QARD  250.0
QARD  300.0
QARD  350.0
QARD  400.0
QARD  500.0
QARD  600.0
QARD  643.3
XSEC1000.0    1000.0 1.0      95.37  0.00031
1000.0  0.0103.0  2.0102.7  2.5 99.6  3.0 98.4  4.0 97.2  5.3 96.3
1000.0  6.0 95.8  7.0 95.6  8.0 95.3  9.0 95.3 10.0 95.2 11.0 95.1
1000.0 12.0 95.1 13.0 95.0 14.0 95.1 15.0 95.8 16.0 95.9 17.0 95.9
1000.0 18.0 96.0 19.0 96.0 19.6 96.3 27.0 97.3 40.0 97.8 46.0 98.4
1000.0 56.0 97.9 57.5 96.4 59.0 96.3 61.0 96.4 74.0 97.1131.0 96.8
1000.0137.5 97.9142.0 97.7143.9 96.6145.4 96.2146.8 95.6148.8 95.8
1000.0150.8 95.4152.8 95.2154.8 95.2156.8 95.1158.8 95.1160.8 95.1
1000.0162.8 95.1164.8 95.4166.8 95.3168.8 95.3170.8 95.5172.8 95.6
1000.0174.8 95.8176.8 96.1178.1 96.6179.0 97.2181.5 97.9183.0 99.0
1000.0187.7100.7
NS 1000.0      1.1      1.1      1.1      1.1      1.1
NS 1000.0      3.2      3.2      3.4      4.4      4.4
NS 1000.0      3.4      3.9      3.9      7.7      7.7
NS 1000.0      9.2 0.08  9.9 0.08  1.1      1.1
NS 1000.0      1.1      1.1      1.1      1.1      1.1
NS 1000.0      1.1      1.1 .08  1.1 0.05  1.2 0.05  2.5
NS 1000.0      2.5      2.5      5.2      5.2      5.2
NS 1000.0      5.2      6.2      6.2      6.2      6.2
NS 1000.0 0.1  1.2 0.1  1.1 0.1  1.1      1.1
NS 1000.0      1.1
WSL 1000.0     96.04     96.09     96.17     96.25     96.40     96.54
WSL 1000.0     96.58     96.72     96.81     96.89     96.97     97.04
WSL 1000.0     97.09     97.14     97.19     97.24     97.28     97.32
WSL 1000.0     97.35     97.38     97.41     97.47     97.52     97.60
WSL 1000.0     97.72     97.83     97.92     98.11     98.27     98.33
CAL11000.0     96.59     36.1
VEL11000.0      0.00 0.50 0.40 0.80 0.80 1.00 1.00
VEL11000.0 0.75 0.90 0.80 0.65 0.55 0.30 0.25 0.01 0.00
VEL11000.0      0.00 0.01 0.15 0.40
VEL11000.0 0.70 0.65 1.00 1.05 0.95 1.00 1.10 0.75 0.55 0.60 0.60 0.35
VEL11000.0 0.10 0.01 0.00
CAL21000.0     96.04     3.5
VEL21000.0
VEL21000.0
VEL21000.0
VEL21000.0
VEL21000.0
CAL31000.0     98.34     643.3
VEL31000.0
VEL31000.0
VEL31000.0
VEL31000.0
VEL31000.0
ENDJ

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RUN                                MID                                TRANSECT 3
IOC      1101100100001000101000
QARD 3.5
QARD 5.0
QARD 8.0
QARD 12.0
QARD 20.0
QARD 30.0
QARD 36.1
QARD 50.0
QARD 60.0
QARD 70.0
QARD 80.0
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 200.0
QARD 220.0
QARD 250.0
QARD 300.0
QARD 350.0
QARD 400.0
QARD 500.0
QARD 600.0
QARD 643.3
XSEC1000.0  1000.0 1.0      95.37  0.00031
1000.0  0.0103.1  2.0102.7  3.3 96.3  4.0 96.0  5.5 95.4  7.0 95.3
1000.0  8.5 95.4  10.0 95.4  11.5 95.7  13.0 95.9  14.5 95.8  16.0 95.7
1000.0  17.5 95.8  17.9 96.3  22.0 97.1  30.0 98.1  55.0 98.1  86.0 97.3
1000.0111.0  97.9121.0  97.0126.0  97.8129.0  97.4142.0  97.3148.0  97.9
1000.0159.0  97.7167.0  97.0170.5  96.6173.9  96.1174.9  95.9175.9  96.0
1000.0176.9  95.7177.9  95.6178.9  95.5179.9  95.3180.9  95.2181.9  95.1
1000.0182.9  95.2183.9  95.1184.9  95.1185.9  94.8186.9  94.9187.9  95.5
1000.0188.9  95.5189.9  95.6190.9  96.0191.9  96.1193.0  96.6194.0  97.2
1000.0195.0  97.9196.0  99.1198.6100.2
NS 1000.0      1.1      1.1      1.1      2.2      2.4 .025  4.4
NS 1000.0 .025  4.4      3.9      3.9 .04  3.9 .04  3.9 0.05  3.9
NS 1000.0 0.05  9.9 0.06  1.1 .07  1.1      1.1 0.08  1.1      1.1
NS 1000.0      1.1      1.1      1.1      1.1 0.10  1.1      1.1      1.1
NS 1000.0      1.1      1.1      1.1      1.1      1.5 0.02  5.2
NS 1000.0 0.02  5.2 .018  5.2 .022  5.2 .022  5.2 .019  5.2 .025  5.2
NS 1000.0 .027  5.2 .028  5.2 .022  6.6      5.2      5.2      6.5
NS 1000.0      6.5      6.2      6.2 .05  6.2 .05  5.1      1.1
NS 1000.0      1.1      1.1      1.1
WSL 1000.0      96.06      96.11      96.19      96.28      96.44      96.58
WSL 1000.0      96.63      96.78      96.87      96.96      97.03      97.11
WSL 1000.0      97.16      97.22      97.27      97.32      97.37      97.41
WSL 1000.0      97.44      97.48      97.51      97.58      97.63      97.72
WSL 1000.0      97.84      97.96      98.06      98.24      98.41      98.47
CAL11000.0      96.63      36.1
VEL11000.0      0.00 0.40  1.10  1.50  1.35  1.10  0.70  0.20  0.15  0.05
VEL11000.0 0.20 0.00
VEL11000.0      0.00 0.70  0.80  1.10  1.50  1.80  1.50  1.70  2.05  1.60
VEL11000.0 1.40 1.40  1.80  1.30  0.90  0.90  0.75  0.50  0.45  0.25  0.00
VEL11000.0
CAL21000.0      96.05      3.5
VEL21000.0
VEL21000.0
VEL21000.0
VEL21000.0
VEL21000.0
CAL31000.0      98.47      643.3
VEL31000.0
VEL31000.0
VEL31000.0
VEL31000.0
VEL31000.0
ENDJ

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