State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WATER RIGHTS

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
Robert L. Morgan
State Engineer

1594 West North Temple, Suite 220
Box 146300
Salt Lake City, Utah 84114-6300
801-538-7240
801-538-7467 (Fax)

April 28, 1998

Marv Widerberg
7970 Highland Dr
Salt Lake City UT 84121

Tim O'Hara
1501 S 500 E
Salt Lake City UT 84105

Dear Marv and Tim:

Enclosed are the results of the current meter measurements that we made on the Richards Ditch ramp flumes on April 27th. I have tried to show the calculations used to determine the flow for each flume. I have also included the average gage height that we recorded during each measurement and the corresponding flow from the ramp tables created by Salt Lake City.

It appears there is a little difference between the current meter flow and the flow read from the table at the lower flow rate. However, at the higher flow rate, the current meter flow and the flow read from the table are almost identical.

Tim, would you please pass this information along to Dan and Larry.

I hope this information will be helpful. If another need arises to check measuring devices, please contact me or Jim Riley and we will make our best effort to work it into our staff schedule.

Sincerely,

Lee H. Sim, P.E.
Assistant State Engineer
for Adjudication and Distribution

cc: Jim Riley

LITTLE COTTONWOOD CREEK - RICHARDS DITCH

4-27-98 Current meter work to check gage height / flow tables

Average digital current meter readout recorded at 10 second intervals

SOUTH RAMP FLUME (UPSTREAM)

Ramp is 30" wide at water surface

First Measurement

Position across weir	1st velocity reading	2nd velocity reading	3rd velocity reading	4th velocity reading	5th velocity reading	6th velocity reading	Average Velocity (fps)	Water Depth (ft)	Section Width (ft)	Section Flow (cfs)
3"	1.60	1.60	1.62	1.60	1.63	1.61	1.61	1.10	0.375	0.66
6"	1.59	1.58	1.61	1.61	1.64	1.68	1.62	1.10	0.250	0.45
9"	1.70	1.67	1.70	1.71	1.59	1.67	1.67	1.10	0.250	0.46
12"	1.76	1.80	1.76	1.75	1.70	1.70	1.75	1.10	0.250	0.48
15"	1.68	1.73	1.73	1.74	1.67	1.76	1.72	1.10	0.250	0.47
18"	1.72	1.71	1.68	1.73	1.65	1.78	1.71	1.10	0.250	0.47
21"	1.74	1.81	1.73	1.67	1.72	1.74	1.74	1.05	0.250	0.46
24"	1.76	1.76	1.74	1.74	1.80	1.81	1.77	1.05	0.250	0.46
27"	1.72	1.68	1.80	1.82	1.72	1.73	1.75	1.05	0.375	0.69

Current meter flow rate (cfs) **4.60**

Average gage height during metering = 0.67

Flow rate from table (cfs) = **4.17**

Second Measurement

Position across weir	1st velocity reading	2nd velocity reading	3rd velocity reading	4th velocity reading	5th velocity reading	6th velocity reading	Average Velocity (fps)	Water Depth (ft)	Section Width (ft)	Section Flow (cfs)
3"	2.07	2.17	2.18	2.18	2.15	2.17	2.15	1.35	0.375	1.09
6"	2.22	2.25	2.27	2.23	2.30	2.30	2.26	1.35	0.250	0.76
9"	2.29	2.30	2.35	2.35	2.25	2.38	2.32	1.35	0.250	0.78
12"	2.36	2.32	2.30	2.34	2.31	2.33	2.33	1.35	0.250	0.79
15"	2.44	2.38	2.32	2.40	2.37	2.36	2.38	1.35	0.250	0.80
18"	2.44	2.39	2.37	2.37	2.26	2.37	2.37	1.35	0.250	0.80
21"	2.39	2.36	2.35	2.41	2.44	2.37	2.39	1.35	0.250	0.81
24"	2.32	2.30	2.30	2.34	2.45	2.38	2.35	1.35	0.250	0.79
27"	2.22	2.24	2.29	2.27	2.18	2.18	2.23	1.35	0.375	1.13

Current meter flow rate (cfs) **7.75**

Average gage height during metering = 0.92

Flow rate from table (cfs) = **7.86**

LITTLE COTTONWOOD CREEK - RICHARDS DITCH

4-27-98 Current meter work to check gage height / flow tables

Average digital current meter readout recorded at 10 second intervals

NORTH RAMP FLUME (DOWNSTREAM) Ramp is 31" wide at water surface

First Measurement

Position across weir	1st velocity reading	2nd velocity reading	3rd velocity reading	4th velocity reading	5th velocity reading	6th velocity reading	Average Velocity (fps)	Water Depth (ft)	Section Width (ft)	Section Flow (cfs)
3"	2.52	2.54	2.55	2.53	2.52	2.52	2.53	0.45	0.375	0.43
6"	2.69	2.59	2.57	2.55	2.60	2.63	2.61	0.45	0.250	0.29
9"	2.62	2.55	2.55	2.55	2.57	2.54	2.56	0.45	0.250	0.29
12"	2.57	2.53	2.57	2.55	2.61	2.57	2.57	0.45	0.250	0.29
15"	2.59	2.56	2.59	2.61	2.60	2.59	2.59	0.45	0.250	0.29
18"	2.53	2.61	2.61	2.58	2.56	2.58	2.58	0.45	0.250	0.29
21"	2.56	2.54	2.56	2.50	2.50	2.54	2.53	0.45	0.250	0.29
24"	2.52	2.50	2.49	2.47	2.48	2.48	2.49	0.45	0.250	0.28
27"	2.50	2.50	2.47	2.49	2.51	2.48	2.49	0.45	0.458	0.51

Current meter flow rate (cfs) **2.96**

Average gage height during metering = 0.52

Flow rate from table (cfs) = **2.66**

Second Measurement

Position across weir	1st velocity reading	2nd velocity reading	3rd velocity reading	4th velocity reading	5th velocity reading	6th velocity reading	Average Velocity (fps)	Water Depth (ft)	Section Width (ft)	Section Flow (cfs)
3"	3.29	3.34	3.34	3.28	3.31	3.32	3.31	0.75	0.375	0.93
6"	3.33	3.32	3.34	3.37	3.32	3.34	3.34	0.75	0.250	0.63
9"	3.35	3.38	3.39	3.34	3.20	3.30	3.33	0.75	0.250	0.62
12"	3.32	3.30	3.34	3.32	3.24	3.22	3.29	0.75	0.250	0.62
15"	3.14	3.24	3.23	3.24	3.31	3.22	3.23	0.75	0.250	0.61
18"	3.13	3.22	3.17	3.19	3.18	3.17	3.18	0.75	0.250	0.60
21"	3.04	3.09	3.05	3.03	3.10	3.06	3.06	0.75	0.250	0.57
24"	3.07	3.12	3.16	3.12	3.15	3.12	3.12	0.75	0.250	0.59
27"	3.12	3.18	3.14	3.20	3.09	3.11	3.14	0.75	0.458	1.08

Current meter flow rate (cfs) **6.24**

Average gage height during metering = 0.82

Flow rate from table (cfs) = **6.23**