

**Water Supply and Hydrology Study**  
**MCCULLOCH RESERVOIR WATER SUPPLY AREA**  
*(Year 6 – 2008 Report)*



**Prepared for the**  
**SOUTH EAST KELOWNA IRRIGATION DISTRICT**

**Kelowna, BC**

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## Summary:

The hydrometric stations at Pooley, Stirling, Canyon and Hydraulic Creeks operated from May through October 2008. The water yields for the May through October periods are as follows: (Pooley Creek – 3,682 AF, Stirling Creek – 2,450 AF, Canyon Creek – 4,016 AF and Hydraulic Creek – 11,334 AF. The Hydraulic and Stirling Creeks combined yield=**13,784 AF**).

## 1.0 Introduction:

This is the 2008 update report for the water SEKID water supply study. The 2003-2008 data summary tables are provided in Appendix A. The period of record for the four stations varies from year to year depending when the stations are ice-free, however data is typically collected from May 1<sup>st</sup> through October 31<sup>st</sup>. The unusual 2008 spring weather was problematic for the stations operation.

A warm period during late April started to break up the stream ice; however, this warm period was followed by a freezing period, which caused the partly broken ice on several streams to re-freeze. This resulted in ice damming and water flowing otop of the ice. The water on ice situation resulted in false high water readings and stream discharge summaries could not be provided for most of May 2008.

## 2.0 Project Activities:

The completion dates for the various project activities completed in 2008 are summarized in Table 1.

**Table 1 – 2008 Project Activities**

<b>Dates</b>	<b>Activity</b>
April 28, 2008	Attempt to de-ice wells at all four stations, unsuccessful
May 13, 2008	Attempt to de-ice wells at all four stations, unsuccessful
May 16, 2008	Attempt to de-ice wells, Stirling and Hydraulic operational
May 23, 2008	Measure discharge and correct sensor readings at all four sites
June 19, 2008	Measure flow and download data at all four sites
July 8, 2008	Measure flow and download data at all four sites
Aug. 12, 2008	Low flow measurements and download data at all four sites
Sept. 10, 2008	Survey benchmarks
Sept. 29, 2008	Low flow measurements and download data at all four sites
Nov. 4, 2008	Pump out wells and remove equipment at all four sites

### 3.0 Data Summary:

The continuous water level data (hourly data) was collected from May 27 to November 3, 2008 at Pooley Creek, May 23 to November 3, 2008 at Canyon Creek and from May 16 to November 3, 2008 at Stirling Creek and data was collected from May 13 to November 3, 2008 at Hydraulic Creek (refer to Appendix A).

Table 2 summarizes mean monthly discharges for 2003 - 2008 with previous WSC data and monthly water yields are summarized in Table 3. Table 4 summarizes the Environment Canada climate data – seasonal ranking for the south BC mountains region.

**Table 2 – Mean Monthly Discharge (WSC Data vs 2003-2008 Data)**

Data	Mean Monthly Discharge (m <sup>3</sup> /s)						
	Apr.	May	June	July	Aug.	Sept.	Oct.
Pooley 2003	-	-	-	-	-	-	0.025
Pooley 2004	0.294	1.020	0.454	0.036	0.013	0.136	0.067
Pooley 2005 <sup>3</sup>	-	0.828	0.445	0.100	0.006	0.006	0.015
Pooley 2006	-	1.447	0.659	0.056	0.007	0.010	0.023
Pooley 2007	-	0.761	0.598	0.128	0.006	0.005	0.075
Pooley 2008	-	0.933 <sup>4</sup>	0.790	0.053	0.011	0.006	0.012
WSC Pooley	-	0.957	0.868	0.123	0.016	0.063	0.018
Stirling 2003	-	-	-	-	-	-	0.021 <sup>1</sup>
Stirling 2004	0.349	0.334	0.121	0.018	0.007	0.037	0.036
Stirling 2005	-	0.701	0.202	0.064	0.005	0.005	0.017
Stirling 2006	-	0.859	0.295	0.079	0.010	0.011	0.016
Stirling 2007	-	0.446	0.122	0.054	0.005	0.004	0.021
Stirling 2008	-	0.878 <sup>4</sup>	0.233	0.014	0.003	0.002	0.006
WSC Stirling	0.041	0.356	0.148	0.012	0.003	0	0
Canyon 2004	0.329	0.722	0.206	0.028	0.005	0.036	0.034
Canyon 2005	0.431	0.713	0.194	0.072	0.005	0.002	0.015
Canyon 2006	-	1.263	0.469	0.105	0.006	0.007	0.019
Canyon 2007	-	0.762	0.324	0.123	0.012	0.007	0.036
Canyon 2008	-	1.411 <sup>4</sup>	0.409	0.028	0.004	0.002	0.008
Hydraulic 2004	-	2.349	0.868	0.072 <sup>2</sup>	0.039	0.286	0.162
Hydraulic 2005	-	0.739	1.479	0.389	0.025	0.024	0.046
Hydraulic 2006	-	2.681	1.738	0.210	0.015	0.013	0.025
Hydraulic 2007	-	2.487	1.376	0.338	0.026	0.014	0.099
Hydraulic 2008	-	5.154 <sup>4</sup>	1.202	0.072	0.018	0.015	0.019

1-This value is estimated based on hourly data collected from Oct 14, 2003 08:45 PST to Oct 31, 2003 23:45 PST.

2-Power lost/data missing from July 4, 2004 08:00 PST to July 13, 2004 09:00 PST (8 days of data missing, 0.072 is the 23 day mean).

3-Corrected data, values in 2005 report incorrect.

WSC Pooley values based on data collected from 1973 - 1979, WSC Stirling values based on data collected from 1977 - 1984.

4-This value is estimated based on incomplete monthly data and may be subject to unacceptable error.

The mean monthly discharges were calculated using the hourly field data (stage/water level) and the corresponding discharge values derived from the stage discharge curves. The total discharge from each hour was calculated and then summed for each month. This value was then divided by the total number of seconds in that month to arrive at the mean monthly discharges (refer to Appendix A).

**Table 3 –Monthly Yields (WSC Data vs 2003-2008 Data)**

Data	Monthly Yields (AF)							
	Apr.	May	June	July	Aug.	Sept.	Oct.	Total
Pooley 2003	-	-	-	-	-	-	54.3	-
Pooley 2004	617	2216	953	77.5	27.8	286	136	4313
Pooley 2005 <sup>3</sup>	-	1798 <sup>1</sup>	936	218	14.3	12.3	30.7	3009
Pooley 2006	-	3142 <sup>1</sup>	1385	121	15.3	20.4	49.2	4733
Pooley 2007	-	1653	1258	278	13.1	11.3	164	3377
Pooley 2008	-	2026 <sup>1</sup>	1660	116	22.8	12.1	25.3	3862
WSC Pooley	-	2078	1824	267	35	132	39	4375
Stirling 2003	-	-	-	-	-	-	45.6	-
Stirling 2004	733 <sup>1</sup>	725	254	38	16	78.7	73.3	1918
Stirling 2005	-	1523	425	139	10.7	10.2	36.6	2145
Stirling 2006	-	1865	620	171	22.2	23.3	33.7	2735
Stirling 2007	-	967	256	117	11.3	8.69	46.2	1406
Stirling 2008	-	1906 <sup>1</sup>	489	31.4	6.8	4.1	12.9	2450
WSC Stirling	86	773	311	26	6.5	0	0	1203
Canyon 2004	694 <sup>1</sup>	1568	433	60	11.2	74.9	73.7	2915
Canyon 2005	906	1548	408	157	10.2	3.4	33.3	3066
Canyon 2006	-	2742 <sup>1</sup>	986	229	13.7	15.9	40.4	4027
Canyon 2007	-	1655	681	266	26.0	14.6	77.9	2721
Canyon 2008	-	3064 <sup>1</sup>	861	61.7	8.2	4.1	16.9	4016
Hydraulic 2004	-	5103	1885	156 <sup>2</sup>	86.1	622	351	8203
Hydraulic 2005	-	1604	3109	844	54.1	50.0	99.7	5761
Hydraulic 2006	-	5821	3653	456	31.8	28.2	54.7	10045
Hydraulic 2007	-	5399	2891	734	57.2	29.7	215	9326
Hydraulic 2008	-	8540 <sup>1</sup>	2526	157	38.7	30.9	40.9	11334

1-Incomplete monthly data, yields estimated using mean monthly discharge (m<sup>3</sup>/s) multiplied by the number of seconds in that month and converted to Acre Feet.

2-This value is estimated, because 8 days of hourly data are missing, the 23 day average from Table 4 was used to calculate a 31 day yield.

WSC Pooley values based on mean data collected from 1973 - 1979, WSC Stirling values based on mean data collected from 1977 - 1984.

3-Corrected Data, values in 2005 report incorrect.

The total monthly yield was calculated in cubic meters and converted to acre-feet by multiplying the cubic meter value by 0.0008107 (1 m<sup>3</sup> = 0.0008107 acre feet). The metric data was converted to acre-feet so that it is consistent with other water supply data used by SEKID staff.

The maximum yields were estimated to have occurred in May during the snowmelt period. The minimum yields occurred during September at all four sites. From May 1, to October 31, 2008, the estimated combined yield recorded at the Hydraulic Creek station and the Stirling Creek station is 13,784 AF.

**Table 4 – Environment Canada Precipitation and Temperature Data for the South BC Mountains Region**

<b>Season</b>	<b>Precipitation Rank (wettest to driest)</b>	<b>Temperature Rank (warmest to coolest)</b>
2007/2008 Winter	45	37
2008 Spring	53	43
2008 Summer	31	31
2008 Fall	52	16
2006/2007 Winter	40	15
2007 Spring	38	20
2007 Summer	43	13
2007 Fall	44	33
2005/2006 Winter	50	6
2006 Spring	34	19
2006 Summer	50	6
2006 Fall	10	40
2004/2005 Winter	42	18
2005 Spring	47	2
2005 Summer	8	29
2005 Fall	21	26
2003/2004 Winter	59	24
2004 Spring	37	4
2004 Summer	15	4
2004 Fall	5	30

The above ranks are based on 61 years of Environment Canada Data (1948-2008). Please refer to Appendix A for additional data.

Overall, 2008 was drier and cooler than average (except for the fall 2008 which was warmer than average).

### ***Pooley Creek***

The left stream bank (as viewed facing downstream) and the streambed at the hydrometric station eroded during the 2008 freshet. This was likely due to the ice damming and subsequent flood flows breaching the natural channel boundary. This has resulted in changes to the natural flow control features at the hydrometric station and changes to the stage discharge relationship. Because of this, a new extended stage discharge curve is used for 2008, and a low-level stage discharge curve has also been created.

The maximum daily discharge was recorded on June 11, 2008 and was 1.59 m<sup>3</sup>/s. However, during the May 23, 2008 site visit there was evidence that the water had recently been nearly 20 cm higher. This would equate to a maximum stage of approximately 1.015 m. The corresponding discharge for this stage is approximately

3.0 m<sup>3</sup>/s, which likely occurred on or near May 18, 2008 – the date other stations peak flow occurred on.

The minimum daily discharge was 0.003 m<sup>3</sup>/s and occurred on several dates between August 16 and September 20, 2008. The May 1 through October 31, 2008 yield from Pooley Creek was approximately 3,862 AF. Refer to Appendix A for additional details.

### ***Stirling Creek***

The staff/reference gauge in the stream at this station was replaced in 2008 due to previous damage. The stage discharge relationship has changed for 2008. There are minor changes in bed load distribution at this station, and although the changes are minor, they have a significant affect on low flow measurements. In addition, previously brushed out vegetation along the banks are regenerating and small willows, alder and semi aquatic plants within the wetted channel affect the stage/discharge relationship.

From June 15, 2008 to June 19, 2008 an unknown error (possibly ice in the well) interfered with the water level readings. The actual readings for this period were estimated using the most recent confirmed values before and after the interference and the stream responses in the other stations in the study area.

The maximum daily discharge occurred on May 17, 2008 and was 1.951 m<sup>3</sup>/s. The minimum daily discharge was 0.000 m<sup>3</sup>/s and occurred on several dates between August 6 and August 18, 2008. The May 1 through October 31, 2008 yield from Stirling Creek was approximately 2,450 AF. Refer to Appendix A for additional details.

### ***Canyon Creek***

This station was established in 2004, so no comparative WSC data exists for this site. The low-level stage discharge relationship has changed at this site due to subtle changes to the natural channel control features immediately downstream from the station. A new low level stage discharge curve has been created for 2008. The base and extended curves remain unchanged.

The maximum daily discharge occurred on May 26, 2008 and was 2.441 m<sup>3</sup>/s. The minimum daily discharge was 0.001 m<sup>3</sup>/s and occurred on several dates between August 8, 2008 and September 21, 2008. The May 1 through October 31, 2008 yield from Canyon Creek was approximately 4,016 AF.

### ***Hydraulic Creek***

This station was also established in 2004, so no comparative WSC data exists for this site. A lateral channel bar deposit is migrating through the channel at the hydrometric station location. The resulting minor change in channel shape has resulted in changes to the extended stage discharge curve for 2008. The base curve remains unchanged for 2008. This station records the combined runoff from the Pooley Creek and Canyon Creek diversions as well as the runoff from the residual catchment area upstream from this station location. The Stirling Creek diversion enters Hydraulic Creek downstream from the Hydraulic Creek hydrometric station.

The maximum daily discharge occurred on May 18, 2008 and was 10.03 m<sup>3</sup>/s. This is the highest peak flow recorded at this station since it was established. Site visits on May 16, 23 and May 24 did not reveal any problems with the station recordings or stream

channel (no ice problems) so this value is valid. Discharge values calculated for this date with Manning's formula are consistent with the peak discharge reported. The minimum daily discharge was 0.007 m<sup>3</sup>/s and occurred on August 17, 2008. The May 1 through October 31, 2008 yield from Hydraulic Creek was approximately 11,334 AF.

#### **4.0 Conclusions:**

Environment Canada climate data for the Southern BC Mountains Region indicates that overall, 2008 was drier and cooler than normal. Despite the regional climate data, the May through October 2008 water yields at Hydraulic, Canyon, Pooley and Stirling Creeks ranked 1, 2, 3, and 2 respectively during the 2004-2008 period.

The sudden warm period during mid April 2008 caused stream ice to break up. However part way through the break up there was a cold period which re-froze the stream channels. This re-freeze resulted in ice dams and localized flooding and it was not possible to obtain accurate discharge measurements until well into May when all the ice was gone. Discharge values for May 2008 are estimates based on limited data.

The ice dams, localized flooding and resulting erosion changed the channel dimensions and the stage discharge relationships at all four stations.

From May 1 through October 31, 2008 the estimated yield at the Hydraulic Creek station was 11,334 AF. The yield at the Stirling Creek station was 2,450 AF for a total supply of 13,784 AF of run-off to the McCulloch Reservoir from the upper catchment areas.

Part of the new Turtle Reservoir expansion involved in stream works on Hydraulic Creek. The in stream works affected the stream gauging station on Hydraulic Creek, and in the fall, a new gauging section was identified and marked in the field. The new cross section is located approximately 25 m downstream from the Hydraulic Hydrometric Station.

## 5.0 Recommendations:

Continue to collect and analyze hydrometric data at the four stations to develop a database that can be used to define the runoff trends for these catchments.

Continue to measure stage and discharge during the 2009 open water season to better define the stage discharge relationship at all four stations.

Continue with routine site inspections at the hydrometric stations to confirm proper operation. The inspections can, for the most part, be completed during times when flow measurements are made, and at a minimum should be conducted biweekly during freshet and monthly thereafter.

Re-survey the installations at all four sites and ensure the reference gauges are at the correct datum during the 2008 spring station start-up.

Original Signed by: \_\_\_\_\_  
prepared by G.J. VanEmmerik, AScT.

Original Signed by \_\_\_\_\_  
reviewed by D.A. Dobson, P.Eng.

# **Appendix A**

## **Data**

There have been channel changes at all four creeks that have affected the stage discharge curves. The following information describes the stage discharge curves used each year at each station.

### **Pooley Creek**

2003-2004 – Stage Discharge Curve #1 (base curve and extended curve)

2005-2006 – Stage Discharge Curve #2 (base curve and extended curve)

2007 – Base Stage Discharge Curve #3 and extended Stage Discharge Curve #2

2008 – Low Level Stage Discharge Curve #1, Base Curve #3, and Ext. Curve #3

### **Stirling Creek**

2003-2004 – Stage Discharge Curve #1 (base curve and extended curve)

2005-2006 – Stage Discharge Curve #2 (base curve and extended curve)

2007 – Stage Discharge Curve #3 (base curve and extended curve)

2008 – Stage Discharge Curve #4 (base curve and extended curve)

### **Hydraulic Creek**

2004-2005 – Stage Discharge Curve #1 (base curve and extended curve)

2006-2007 – Base Stage Discharge Curve #1 and Extended Curve #2

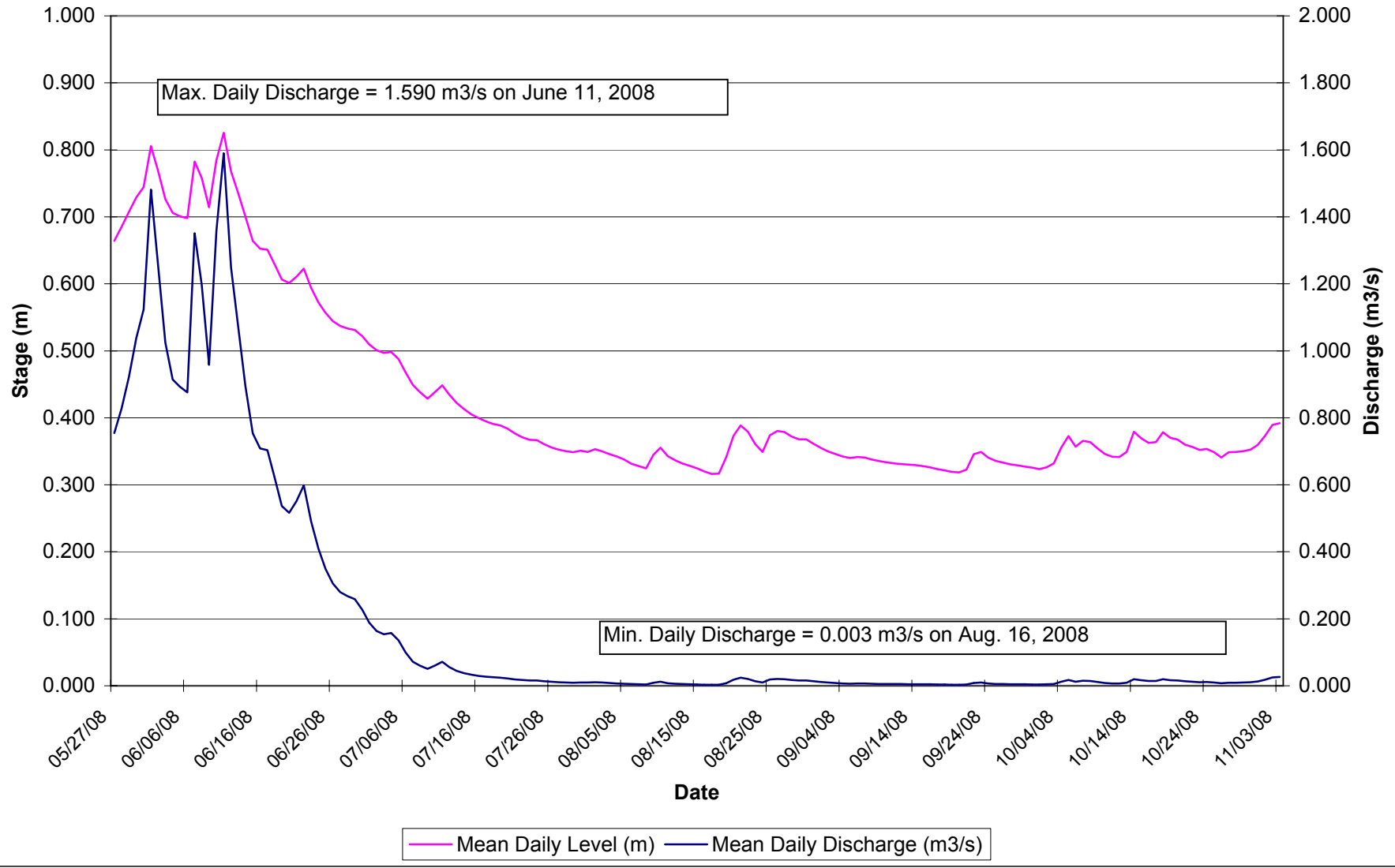
2008 – Base Stage Discharge Curve #1 and Extended Curve #3

### **Canyon Creek**

2004-2007 – Low level, base and Extended Stage Discharge Curve #1

2008 – Low Level Curve #2 and Base and Extended Stage Discharge Curve #1

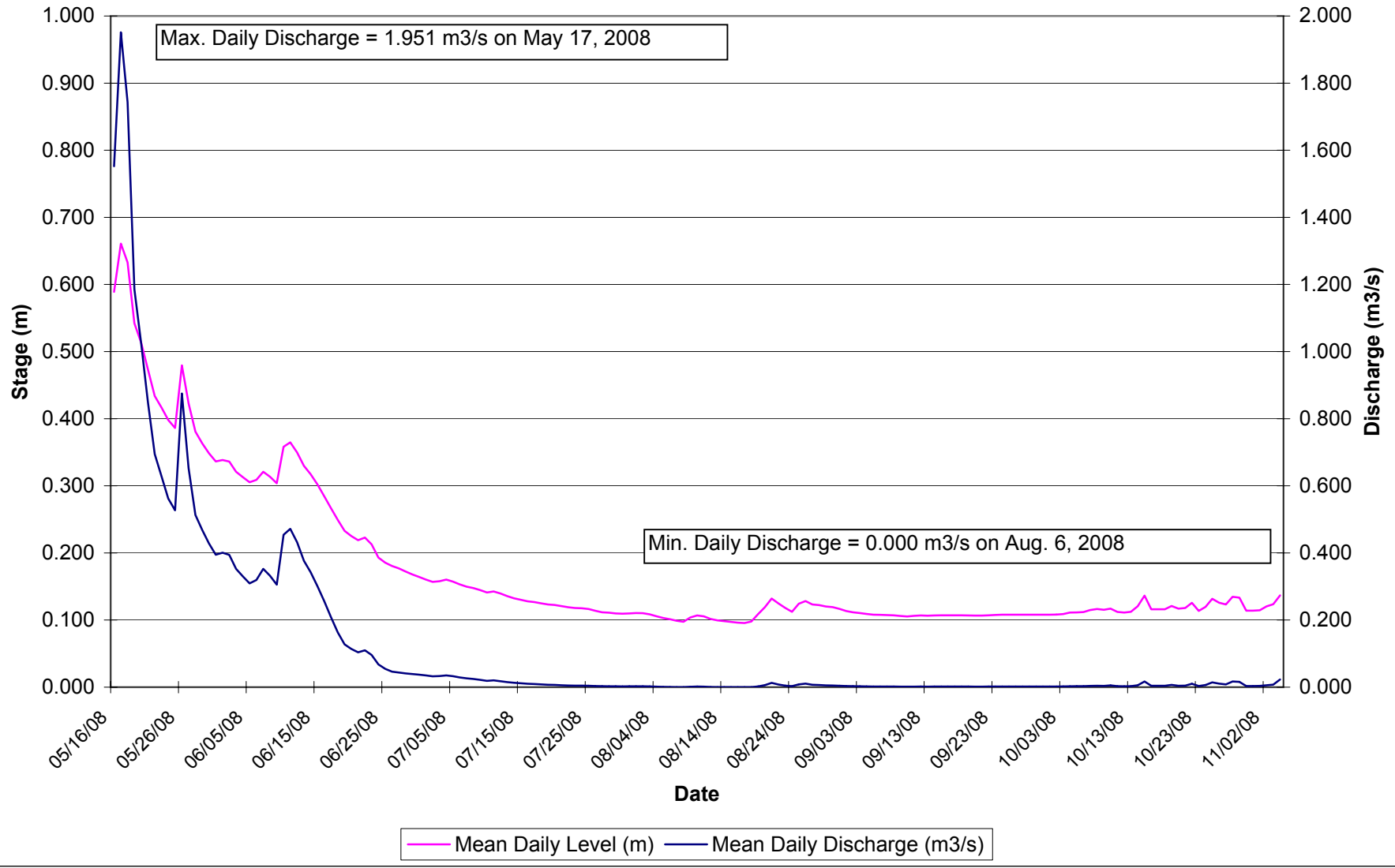
### Pooley Creek Stage and Discharge (2008)



Pooley Creek  
2008 Mean Daily Discharge (m3/s)

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	-	-	-	-	-	1.481	0.189	0.011	0.012	0.004	0.018	-	1
2	-	-	-	-	-	1.257	0.164	0.010	0.010	0.004	0.025	-	2
3	-	-	-	-	-	1.024	0.154	0.008	0.008	0.005	0.026	-	3
4	-	-	-	-	-	0.915	0.157	0.007	0.007	0.012	-	-	4
5	-	-	-	-	-	0.893	0.136	0.006	0.006	0.018	-	-	5
6	-	-	-	-	-	0.876	0.100	0.005	0.007	0.012	-	-	6
7	-	-	-	-	-	1.351	0.072	0.004	0.007	0.015	-	-	7
8	-	-	-	-	-	1.197	0.060	0.004	0.006	0.015	-	-	8
9	-	-	-	-	-	0.958	0.050	0.009	0.006	0.011	-	-	9
10	-	-	-	-	-	1.357	0.060	0.012	0.005	0.008	-	-	10
11	-	-	-	-	-	1.590	0.071	0.007	0.005	0.007	-	-	11
12	-	-	-	-	-	1.249	0.056	0.006	0.005	0.007	-	-	12
13	-	-	-	-	-	1.074	0.044	0.005	0.005	0.009	-	-	13
14	-	-	-	-	-	0.894	0.038	0.005	0.005	0.020	-	-	14
15	-	-	-	-	-	0.754	0.033	0.004	0.004	0.016	-	-	15
16	-	-	-	-	-	0.709	0.030	0.003	0.004	0.014	-	-	16
17	-	-	-	-	-	0.704	0.027	0.003	0.004	0.015	-	-	17
18	-	-	-	-	-	0.621	0.025	0.003	0.004	0.020	-	-	18
19	-	-	-	-	-	0.537	0.024	0.008	0.003	0.017	-	-	19
20	-	-	-	-	-	0.516	0.022	0.018	0.003	0.016	-	-	20
21	-	-	-	-	-	0.551	0.019	0.024	0.004	0.013	-	-	21
22	-	-	-	-	-	0.599	0.017	0.020	0.009	0.012	-	-	22
23	-	-	-	-	-	0.491	0.016	0.014	0.009	0.011	-	-	23
24	-	-	-	-	-	0.409	0.016	0.009	0.007	0.011	-	-	24
25	-	-	-	-	-	0.349	0.014	0.019	0.006	0.010	-	-	25
26	-	-	-	-	-	0.305	0.012	0.021	0.005	0.008	-	-	26
27	-	-	-	-	0.755	0.279	0.011	0.020	0.005	0.009	-	-	27
28	-	-	-	-	0.829	0.267	0.010	0.017	0.005	0.009	-	-	28
29	-	-	-	-	0.922	0.259	0.009	0.016	0.004	0.010	-	-	29
30	-	-	-	-	1.038	0.227	0.010	0.016	0.004	0.011	-	-	30
31	-	-	-	-	1.123	-	0.009	0.014	-	0.013	-	-	31
<b>Max</b>					<b>1.123</b>	<b>1.590</b>	<b>0.189</b>	<b>0.024</b>	<b>0.012</b>	<b>0.020</b>	<b>0.026</b>		
<b>Min</b>					<b>0.755</b>	<b>0.227</b>	<b>0.009</b>	<b>0.003</b>	<b>0.003</b>	<b>0.004</b>	<b>0.018</b>		
<b>Mean</b>					<b>0.933</b>	<b>0.790</b>	<b>0.053</b>	<b>0.011</b>	<b>0.006</b>	<b>0.012</b>	<b>0.023</b>		

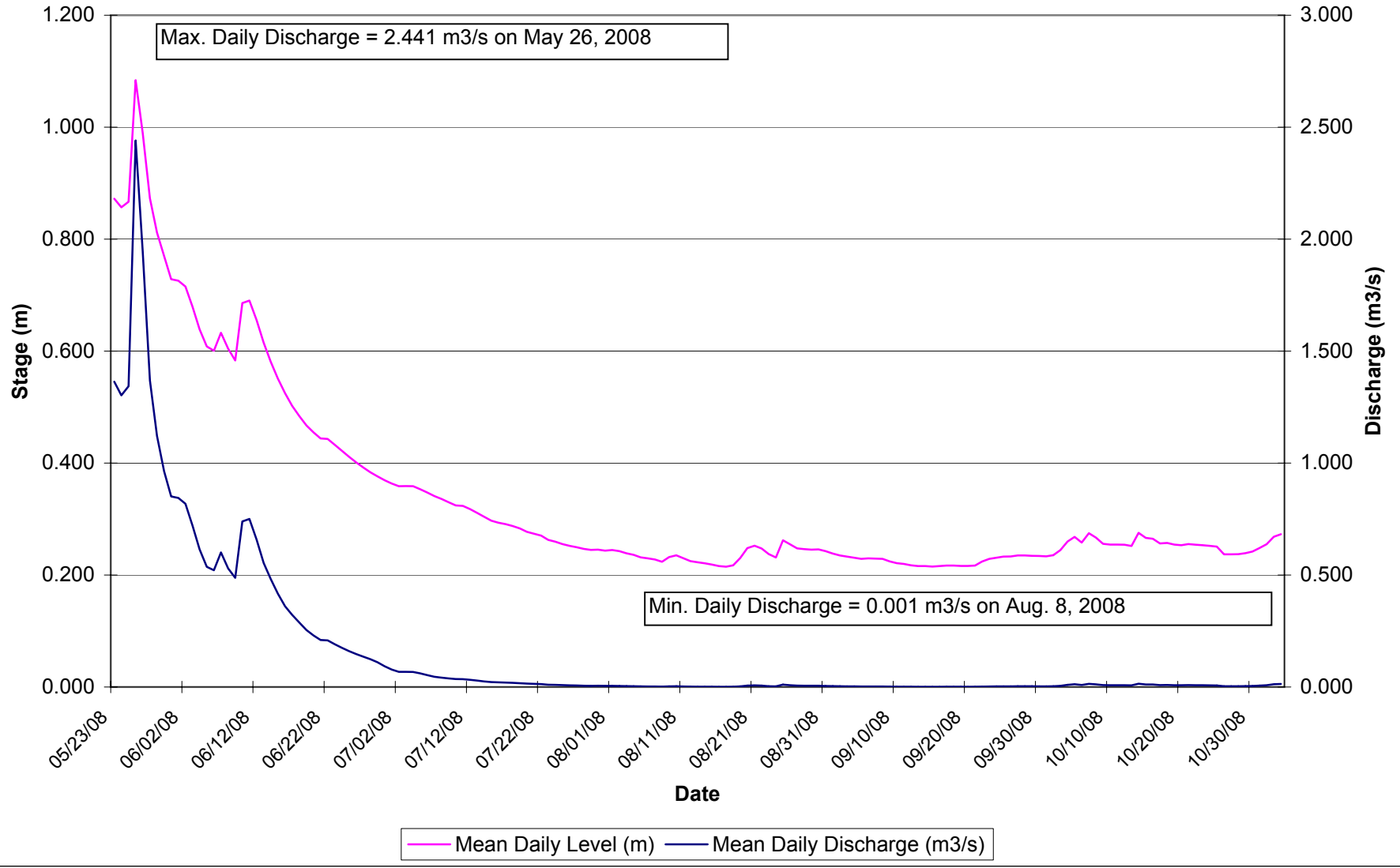
### Stirling Creek Stage and Discharge (2008)



**Stirling Creek diversion  
2008 Mean Daily Discharge (m3/s)**

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	-	-	-	-	-	0.401	0.035	0.003	0.003	0.002	0.004	-	1
2	-	-	-	-	-	0.394	0.032	0.003	0.003	0.002	0.006	-	2
3	-	-	-	-	-	0.352	0.033	0.002	0.003	0.002	0.007	-	3
4	-	-	-	-	-	0.330	0.035	0.001	0.002	0.003	0.023	-	4
5	-	-	-	-	-	0.309	0.033	0.001	0.002	0.003	-	-	5
6	-	-	-	-	-	0.319	0.029	0.000	0.002	0.003	-	-	6
7	-	-	-	-	-	0.352	0.026	0.000	0.002	0.004	-	-	7
8	-	-	-	-	-	0.332	0.024	0.000	0.002	0.004	-	-	8
9	-	-	-	-	-	0.305	0.022	0.001	0.002	0.004	-	-	9
10	-	-	-	-	-	0.454	0.019	0.002	0.001	0.005	-	-	10
11	-	-	-	-	-	0.472	0.020	0.001	0.002	0.003	-	-	11
12	-	-	-	-	-	0.432	0.018	0.000	0.002	0.003	-	-	12
13	-	-	-	-	-	0.377	0.015	0.000	0.002	0.003	-	-	13
14	-	-	-	-	-	0.343	0.013	0.000	0.002	0.006	-	-	14
15	-	-	-	-	-	0.301	0.012	0.000	0.002	0.017	-	-	15
16	-	-	-	-	1.552	0.256	0.010	0.000	0.002	0.004	-	-	16
17	-	-	-	-	1.951	0.209	0.009	0.000	0.002	0.004	-	-	17
18	-	-	-	-	1.743	0.163	0.008	0.000	0.002	0.004	-	-	18
19	-	-	-	-	1.186	0.128	0.007	0.002	0.002	0.007	-	-	19
20	-	-	-	-	1.023	0.114	0.007	0.006	0.002	0.004	-	-	20
21	-	-	-	-	0.849	0.104	0.006	0.013	0.002	0.005	-	-	21
22	-	-	-	-	0.695	0.110	0.005	0.008	0.002	0.010	-	-	22
23	-	-	-	-	0.628	0.096	0.005	0.005	0.002	0.003	-	-	23
24	-	-	-	-	0.562	0.068	0.004	0.003	0.002	0.006	-	-	24
25	-	-	-	-	0.527	0.054	0.004	0.008	0.002	0.014	-	-	25
26	-	-	-	-	0.875	0.046	0.003	0.010	0.002	0.010	-	-	26
27	-	-	-	-	0.653	0.044	0.003	0.007	0.002	0.008	-	-	27
28	-	-	-	-	0.513	0.041	0.003	0.006	0.002	0.017	-	-	28
29	-	-	-	-	0.468	0.039	0.002	0.005	0.002	0.016	-	-	29
30	-	-	-	-	0.428	0.037	0.002	0.005	0.002	0.004	-	-	30
31	-	-	-	-	0.395	-	0.002	0.004	-	0.004	-	-	31
<b>Max</b>					<b>1.951</b>	<b>0.472</b>	<b>0.035</b>	<b>0.013</b>	<b>0.003</b>	<b>0.017</b>	<b>0.023</b>		
<b>Min</b>					<b>0.395</b>	<b>0.037</b>	<b>0.002</b>	<b>0.000</b>	<b>0.001</b>	<b>0.002</b>	<b>0.004</b>		
<b>Mean</b>					<b>0.878</b>	<b>0.233</b>	<b>0.014</b>	<b>0.003</b>	<b>0.002</b>	<b>0.006</b>	<b>0.010</b>		

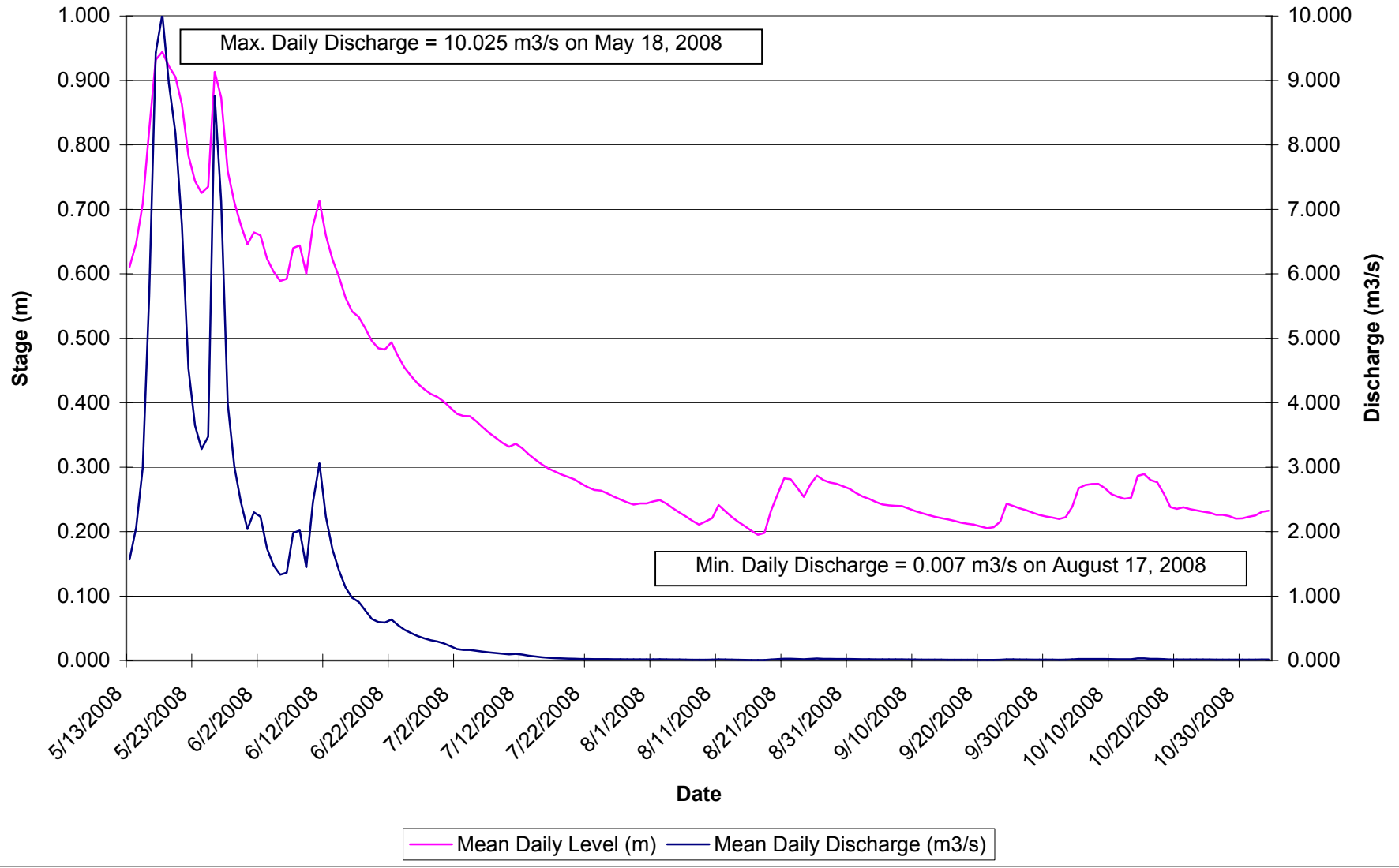
### Canyon Creek Stage and Discharge (2008)



**Canyon Creek  
2008 Mean Daily Discharge (m3/s)**

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	-	-	-	-	-	0.844	0.078	0.005	0.004	0.003	0.008	-	1
2	-	-	-	-	-	0.819	0.068	0.005	0.003	0.003	0.012	-	2
3	-	-	-	-	-	0.721	0.068	0.004	0.003	0.005	0.014	-	3
4	-	-	-	-	-	0.615	0.067	0.003	0.003	0.010	-	-	4
5	-	-	-	-	-	0.537	0.061	0.003	0.002	0.012	-	-	5
6	-	-	-	-	-	0.521	0.053	0.002	0.002	0.009	-	-	6
7	-	-	-	-	-	0.601	0.046	0.002	0.002	0.014	-	-	7
8	-	-	-	-	-	0.530	0.042	0.001	0.002	0.012	-	-	8
9	-	-	-	-	-	0.488	0.039	0.003	0.002	0.008	-	-	9
10	-	-	-	-	-	0.739	0.035	0.003	0.001	0.008	-	-	10
11	-	-	-	-	-	0.750	0.035	0.002	0.001	0.008	-	-	11
12	-	-	-	-	-	0.658	0.032	0.002	0.001	0.008	-	-	12
13	-	-	-	-	-	0.554	0.029	0.001	0.001	0.007	-	-	13
14	-	-	-	-	-	0.482	0.025	0.001	0.001	0.014	-	-	14
15	-	-	-	-	-	0.417	0.022	0.001	0.001	0.012	-	-	15
16	-	-	-	-	-	0.360	0.021	0.001	0.001	0.011	-	-	16
17	-	-	-	-	-	0.323	0.020	0.001	0.001	0.009	-	-	17
18	-	-	-	-	-	0.288	0.019	0.001	0.001	0.009	-	-	18
19	-	-	-	-	-	0.255	0.017	0.003	0.001	0.008	-	-	19
20	-	-	-	-	-	0.230	0.015	0.006	0.001	0.008	-	-	20
21	-	-	-	-	-	0.210	0.014	0.007	0.001	0.008	-	-	21
22	-	-	-	-	-	0.208	0.013	0.006	0.002	0.008	-	-	22
23	-	-	-	-	1.364	0.191	0.010	0.004	0.002	0.008	-	-	23
24	-	-	-	-	1.303	0.175	0.009	0.003	0.003	0.007	-	-	24
25	-	-	-	-	1.343	0.160	0.008	0.011	0.003	0.007	-	-	25
26	-	-	-	-	2.441	0.147	0.007	0.008	0.003	0.004	-	-	26
27	-	-	-	-	1.945	0.135	0.007	0.006	0.003	0.004	-	-	27
28	-	-	-	-	1.369	0.124	0.006	0.006	0.003	0.004	-	-	28
29	-	-	-	-	1.122	0.110	0.005	0.005	0.003	0.004	-	-	29
30	-	-	-	-	0.964	0.093	0.005	0.006	0.003	0.005	-	-	30
31	-	-	-	-	0.851	-	0.005	0.005	-	0.006	-	-	31
<b>Max</b>					<b>2.441</b>	<b>0.844</b>	<b>0.078</b>	<b>0.011</b>	<b>0.004</b>	<b>0.014</b>	<b>0.014</b>		
<b>Min</b>					<b>0.851</b>	<b>0.093</b>	<b>0.005</b>	<b>0.001</b>	<b>0.001</b>	<b>0.003</b>	<b>0.008</b>		
<b>Mean</b>					<b>1.411</b>	<b>0.409</b>	<b>0.028</b>	<b>0.004</b>	<b>0.002</b>	<b>0.008</b>	<b>0.011</b>		

### Hydraulic Creek Stage and Discharge (2008)



Hydraulic Creek above Stirling Ditch  
2008 Mean Daily Discharge (m3/s)

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	-	-	-	-	-	2.300	0.223	0.018	0.021	0.013	0.014	-	1
2	-	-	-	-	-	2.234	0.178	0.019	0.020	0.013	0.015	-	2
3	-	-	-	-	-	1.738	0.165	0.018	0.019	0.013	0.015	-	3
4	-	-	-	-	-	1.475	0.164	0.016	0.018	0.017	-	-	4
5	-	-	-	-	-	1.332	0.151	0.015	0.017	0.023	-	-	5
6	-	-	-	-	-	1.363	0.137	0.013	0.017	0.024	-	-	6
7	-	-	-	-	-	1.981	0.126	0.012	0.017	0.024	-	-	7
8	-	-	-	-	-	2.018	0.116	0.011	0.017	0.024	-	-	8
9	-	-	-	-	-	1.447	0.106	0.012	0.016	0.023	-	-	9
10	-	-	-	-	-	2.448	0.095	0.013	0.015	0.021	-	-	10
11	-	-	-	-	-	3.059	0.104	0.017	0.015	0.020	-	-	11
12	-	-	-	-	-	2.232	0.091	0.015	0.014	0.019	-	-	12
13	-	-	-	-	1.569	1.724	0.075	0.013	0.013	0.020	-	-	13
14	-	-	-	-	2.063	1.397	0.062	0.012	0.013	0.033	-	-	14
15	-	-	-	-	2.989	1.133	0.051	0.010	0.013	0.034	-	-	15
16	-	-	-	-	5.647	0.973	0.042	0.009	0.012	0.026	-	-	16
17	-	-	-	-	9.432	0.909	0.038	0.007	0.011	0.025	-	-	17
18	-	-	-	-	10.025	0.780	0.033	0.008	0.011	0.021	-	-	18
19	-	-	-	-	8.951	0.646	0.030	0.015	0.011	0.017	-	-	19
20	-	-	-	-	8.183	0.598	0.027	0.021	0.010	0.016	-	-	20
21	-	-	-	-	6.761	0.590	0.024	0.028	0.010	0.017	-	-	21
22	-	-	-	-	4.530	0.636	0.023	0.028	0.010	0.016	-	-	22
23	-	-	-	-	3.646	0.551	0.022	0.023	0.012	0.015	-	-	23
24	-	-	-	-	3.282	0.479	0.022	0.020	0.018	0.015	-	-	24
25	-	-	-	-	3.473	0.426	0.021	0.026	0.017	0.015	-	-	25
26	-	-	-	-	8.760	0.379	0.020	0.032	0.016	0.014	-	-	26
27	-	-	-	-	7.121	0.344	0.019	0.026	0.016	0.014	-	-	27
28	-	-	-	-	3.984	0.315	0.018	0.025	0.015	0.014	-	-	28
29	-	-	-	-	3.014	0.296	0.017	0.024	0.014	0.013	-	-	29
30	-	-	-	-	2.459	0.266	0.018	0.023	0.014	0.013	-	-	30
31	-	-	-	-	2.040	-	0.018	0.023	-	0.013	-	-	31
<b>Max</b>					<b>10.025</b>	<b>3.059</b>	<b>0.223</b>	<b>0.032</b>	<b>0.021</b>	<b>0.034</b>	<b>0.015</b>		
<b>Min</b>					<b>1.569</b>	<b>0.266</b>	<b>0.017</b>	<b>0.007</b>	<b>0.010</b>	<b>0.013</b>	<b>0.014</b>		
<b>Mean</b>					<b>5.154</b>	<b>1.202</b>	<b>0.072</b>	<b>0.018</b>	<b>0.015</b>	<b>0.019</b>	<b>0.015</b>		

**Data Double Checked December 3, 2008**  
**May 23 2008 at approximately 18:15 PST at Pooley Creek.**

Used 0.6 depth for flow meter.

Stilling Well = ?? m deep at 18:15 PST  
 Staff Gauge = 0.815 +/- m at 18:15 PST

Pooley Creek Diversion.

Station	(m) Water Depth	(m) width at depth	(m2) Flow Area	(m/s) velocity	(m3/s) Q	
.9-1.0	0.20	0.2	0.040	0.12	0.00480	0.30%
1.2	0.32	0.2	0.064	0.20	0.01280	0.80%
1.4	0.44	0.2	0.088	0.35	0.03080	1.93%
1.6	0.52	0.2	0.104	0.54	0.05616	3.53%
1.8	0.56	0.2	0.112	0.69	0.07728	4.85%
2	0.54	0.2	0.108	0.71	0.07668	4.82%
2.2	0.52	0.2	0.104	0.68	0.07072	4.44%
2.4	0.50	0.2	0.100	0.83	0.08300	5.21%
2.6	0.48	0.2	0.096	0.88	0.08448	5.31%
2.8	0.47	0.2	0.094	0.80	0.07520	4.72%
3	0.48	0.2	0.096	0.79	0.07584	4.76%
3.2	0.46	0.2	0.092	0.80	0.07360	4.62%
3.4	0.47	0.2	0.094	0.86	0.08084	5.08%
3.6	0.48	0.2	0.096	0.84	0.08064	5.06%
3.8	0.45	0.2	0.090	0.76	0.06840	4.30%
4	0.44	0.2	0.088	0.80	0.07040	4.42%
4.2	0.44	0.2	0.088	0.84	0.07392	4.64%
4.4	0.41	0.2	0.082	0.85	0.06970	4.38%
4.6	0.40	0.2	0.080	0.80	0.06400	4.02%
4.8	0.42	0.2	0.084	0.85	0.07140	4.48%
5	0.43	0.2	0.086	0.95	0.08170	5.13%
5.2	0.44	0.2	0.088	0.80	0.07040	4.42%
5.4	0.45	0.2	0.090	0.77	0.06930	4.35%
5.6	0.43	0.2	0.086	0.56	0.04816	3.02%
5.8	0.34	0.2	0.068	0.25	0.01700	1.07%
6.0-6.1	0.25	0.2	0.050	0.10	0.00500	0.31%
		5.2				100.00%

1.59222

Liters/second                      1592.22  
 US Gal/second                      420.62  
 US Gal/minute                      25237.27  
 ft3/second                            56.23

ft3/day                                4858069.57  
 Acre Feet/day                        111.52

**Data Double Checked December 3, 2008**  
**May 23 2008 at approximately 14:50 PST Stirling Creek.**

Used 0.6 depth for flow meter.

0.411

Stilling Well = 0.296 m deep at 14:50 PST (fixed to read 0.400m at 15:05 PST)

Staff Gauge = 0.400 m at 14:50 PST

Stirling Creek Ditch.

Station	(m) Water Depth	(m) width at depth	(m2) Flow Area	(m/s) velocity	(m3/s) Q	
.65-.7	0.12	0.1	0.012	0.15	0.001800	0.31%
0.80	0.2	0.1	0.020	0.51	0.010200	1.75%
0.90	0.26	0.1	0.026	0.46	0.011960	2.05%
1.00	0.29	0.1	0.029	0.68	0.019720	3.38%
1.10	0.32	0.1	0.032	0.92	0.029440	5.05%
1.20	0.34	0.1	0.034	0.97	0.032980	5.66%
1.30	0.35	0.1	0.035	0.92	0.032200	5.52%
1.40	0.35	0.1	0.035	0.96	0.033600	5.76%
1.50	0.36	0.1	0.036	1.00	0.036000	6.17%
1.60	0.37	0.1	0.037	0.97	0.035890	6.16%
1.70	0.40	0.1	0.040	0.93	0.037200	6.38%
1.80	0.40	0.1	0.040	0.99	0.039600	6.79%
1.90	0.38	0.1	0.038	1.07	0.040660	6.97%
2.00	0.36	0.1	0.036	1.08	0.038880	6.67%
2.10	0.33	0.1	0.033	1.00	0.033000	5.66%
2.20	0.34	0.1	0.034	0.93	0.031620	5.42%
2.30	0.34	0.1	0.034	0.75	0.025500	4.37%
2.40	0.34	0.1	0.034	0.76	0.025840	4.43%
2.50	0.31	0.1	0.031	0.71	0.022010	3.78%
2.60	0.30	0.1	0.030	0.72	0.021600	3.70%
2.70	0.27	0.1	0.027	0.62	0.016740	2.87%
2.8-2.85	0.16	0.1	0.016	0.41	0.006560	1.13%
		2.2				100.00%

0.583000

Liters/second 583.00  
 US Gal/second 154.01  
 US Gal/minute 9240.76  
 ft3/second 20.59

ft3/day 1778808.56  
 Acre Feet/day 40.83

**Data Double Checked December 3, 2008**  
**May 23 2008 at approximately 16:25 PST at Canyon Creek.**

Flow too deep and fast to wade. Used surface velocity and average depth.

Stilling Well = 0.616 m at 16:25 PST (Fixed to read 0.875m at 16:55)

Staff Gauge = 0.875 m at 16:25 PST

Canyon Creek

Station	(m) Water Depth	(m) width at depth	(m2) Flow Area	(m/s) velocity	(m3/s) Q	
.35-.4			0.000		0.00000	0.00%
	0.5		0.000		0.00000	0.00%
	0.6		0.000		0.00000	0.00%
	0.7		0.000		0.00000	0.00%
	0.8		0.000		0.00000	0.00%
	0.9		0.000		0.00000	0.00%
	1		0.000		0.00000	0.00%
	1.1		0.000		0.00000	0.00%
	1.2		0.000		0.00000	0.00%
	1.3		0.000		0.00000	0.00%
	1.4		0.000		0.00000	0.00%
	1.5		0.000		0.00000	0.00%
	1.6		0.000		0.00000	0.00%
	1.7		0.000		0.00000	0.00%
	1.8		0.000		0.00000	0.00%
	1.9		0.000		0.00000	0.00%
	2		0.000		0.00000	0.00%
	2.1		0.000		0.00000	0.00%
	2.2		0.000		0.00000	0.00%
	2.3		0.000		0.00000	0.00%
2.4-2.45			0.000		0.00000	0.00%
	Depths	0.92				
		0.88				
		0.90				
	<u>Average</u>	0.90				
	Width	2.25				
	Velocity (surf)	0.78				
	Velocity (0.6 c	0.74				
	Discharge	1.4985 m3/s				

1.49850

Liters/second 1498.50  
 US Gal/second 395.86  
 US Gal/minute 23751.78  
 ft3/second 52.92

ft3/day 4572117.71  
 Acre Feet/day 104.95



**Data Double Checked December 3, 2008**  
**June 19 2008 at approximately 07:55 PST at Pooley Creek.**

Used 0.6 depth for flow meter.

Stilling Well = 0.037 m deep at 07:55 PST (fixed sensor to read 0.610m at 8:02 PST)

Staff Gauge = 0.610 m at 07:55 PST

Pooley Creek Diversion.

Station	(m) Water Depth	(m) width at depth	(m2) Flow Area	(m/s) velocity	(m3/s) Q	
.7-.8	0.10	0.2	0.020	0.01	0.00020	0.05%
1	0.18	0.2	0.036	0.11	0.00396	1.04%
1.2	0.30	0.2	0.060	0.12	0.00720	1.89%
1.4	0.32	0.2	0.064	0.32	0.02048	5.39%
1.6	0.32	0.2	0.064	0.40	0.02560	6.74%
1.8	0.31	0.2	0.062	0.40	0.02480	6.53%
1.9	0.31	0.15	0.047	0.42	0.01953	5.14%
2	0.31	0.1	0.031	0.44	0.01364	3.59%
2.1	0.33	0.1	0.033	0.45	0.01485	3.91%
2.2	0.34	0.1	0.034	0.43	0.01462	3.85%
2.4	0.36	0.15	0.054	0.42	0.02268	5.97%
2.6	0.37	0.2	0.074	0.44	0.03256	8.57%
2.8	0.37	0.2	0.074	0.43	0.03182	8.37%
3	0.36	0.2	0.072	0.38	0.02736	7.20%
3.2	0.36	0.2	0.072	0.36	0.02592	6.82%
3.4	0.32	0.2	0.064	0.41	0.02624	6.91%
3.6	0.32	0.2	0.064	0.41	0.02624	6.91%
3.8	0.30	0.2	0.060	0.42	0.02520	6.63%
4	0.25	0.2	0.050	0.30	0.01500	3.95%
4.2-4.3	0.07	0.2	0.014	0.15	0.00210	0.55%
		3.6				
						100.00%
					0.38000	

Liters/second 380.00  
 US Gal/second 100.39  
 US Gal/minute 6023.14  
 ft3/second 13.42  
  
 ft3/day 1159429.25  
 Acre Feet/day 26.62

**Data Double Checked December 3, 2008**  
**June 19 2008 at approximately 11:00 PST at Stirling Creek.**

Used 0.6 depth for flow meter.

0.231

Stilling Well = 0.270 m deep at 11:00 PST (fixed to read 0.220m at 11:10 PST)

Staff Gauge = 0.220 m at 11:00 PST

Stirling Creek Ditch.

Station	(m) Water Depth	(m) width at depth	(m2) Flow Area	(m/s) velocity	(m3/s) Q	
.45-.50	0.14	0.1	0.014	0.14	0.001960	1.60%
0.60	0.14	0.1	0.014	0.31	0.004340	3.53%
0.70	0.15	0.1	0.015	0.44	0.006600	5.37%
0.80	0.16	0.1	0.016	0.53	0.008480	6.90%
0.90	0.17	0.1	0.017	0.60	0.010200	8.30%
1.00	0.17	0.1	0.017	0.48	0.008160	6.64%
1.10	0.16	0.1	0.016	0.52	0.008320	6.77%
1.20	0.17	0.1	0.017	0.71	0.012070	9.82%
1.30	0.16	0.1	0.016	0.69	0.011040	8.98%
1.40	0.16	0.1	0.016	0.57	0.009120	7.42%
1.50	0.15	0.1	0.015	0.48	0.007200	5.86%
1.60	0.12	0.1	0.012	0.57	0.006840	5.57%
1.70	0.15	0.1	0.015	0.54	0.008100	6.59%
1.80	0.16	0.1	0.016	0.44	0.007040	5.73%
1.90	0.14	0.1	0.014	0.46	0.006440	5.24%
2.00	0.12	0.1	0.012	0.31	0.003720	3.03%
2.1-2.15	0.13	0.1	0.013	0.25	0.003250	2.64%
			1.7			100.00%

0.12288

Liters/second                      122.88  
 US Gal/second                      32.46  
 US Gal/minute                      1947.69  
 ft3/second                            4.34  
  
 ft3/day                                374922.81  
 Acre Feet/day                        8.61



**Data Double Checked December 3, 2008**  
**June 19 2008 at approximately 10:20 PST at Hydraulic Creek.**

Used 0.6 depth for flow meter.

Stilling Well = 0.498 m at 10:20 PST  
 Staff Gauge = 0.496 +/- m at 10:20 PST

Hydraulic Creek

Station	(m) Water Depth	(m) width at depth	(m2) Flow Area	(m/s) velocity	(m3/s) Q	
1.0-1.1	0.06	0.2	0.012	0.01	0.00012	0.02%
1.30	0.08	0.2	0.016	0.22	0.00352	0.47%
1.50	0.11	0.2	0.022	0.44	0.00968	1.29%
1.70	0.22	0.2	0.044	0.34	0.01496	1.99%
1.90	0.25	0.2	0.050	0.68	0.03400	4.52%
2.10	0.26	0.2	0.052	0.52	0.02704	3.59%
2.30	0.27	0.2	0.054	0.37	0.01998	2.66%
2.50	0.23	0.2	0.046	0.41	0.01886	2.51%
2.70	0.24	0.2	0.048	0.67	0.03216	4.27%
2.90	0.31	0.2	0.062	0.23	0.01426	1.90%
3.10	0.30	0.2	0.060	0.68	0.04080	5.42%
3.30	0.39	0.2	0.078	0.49	0.03822	5.08%
3.50	0.34	0.2	0.068	0.79	0.05372	7.14%
3.70	0.35	0.2	0.070	1.06	0.07420	9.86%
3.90	0.33	0.2	0.066	0.90	0.05940	7.89%
4.10	0.31	0.2	0.062	0.95	0.05890	7.83%
4.30	0.30	0.2	0.060	1.14	0.06840	9.09%
4.50	0.28	0.2	0.056	1.00	0.05600	7.44%
4.70	0.27	0.2	0.054	0.62	0.03348	4.45%
4.90	0.23	0.2	0.046	1.06	0.04876	6.48%
5.10	0.23	0.2	0.046	0.26	0.01196	1.59%
5.30	0.20	0.2	0.040	0.43	0.01720	2.29%
5.50	0.18	0.2	0.036	0.34	0.01224	1.63%
5.7-5.8	0.10	0.2	0.020	0.23	0.00460	0.61%
		4.8				100.00%

0.75246

Liters/second 752.46  
 US Gal/second 198.78  
 US Gal/minute 11926.77  
 ft3/second 26.57  
  
 ft3/day 2295852.98  
 Acre Feet/day 52.70





**Data Double Checked December 3, 2008**  
**July 8 2008 at approximately 12:15 PST at Canyon Creek.**

Used 0.6 depth for flow meter.

Stilling Well = 0.337 m at 12:15 PST

Staff Gauge = 0.337 m at 12:15 PST

Canyon Creek

Station	(m) Water Depth	(m) width at depth	(m2) Flow Area	(m/s) velocity	(m3/s) Q	
.475-.50	0.13	0.05	0.007	0.21	0.00137	3.28%
0.55	0.14	0.05	0.007	0.27	0.00189	4.54%
0.6	0.15	0.05	0.008	0.31	0.00233	5.58%
0.65	0.15	0.05	0.008	0.35	0.00263	6.30%
0.7	0.17	0.05	0.009	0.34	0.00289	6.94%
0.75	0.18	0.05	0.009	0.33	0.00297	7.13%
0.8	0.18	0.05	0.009	0.34	0.00307	7.37%
0.85	0.19	0.05	0.010	0.43	0.00409	9.81%
0.9	0.18	0.05	0.009	0.48	0.00432	10.37%
0.95	0.18	0.05	0.009	0.54	0.00486	11.67%
1	0.18	0.05	0.009	0.54	0.00486	11.67%
1.05	0.18	0.05	0.009	0.47	0.00423	10.15%
1.1	0.16	0.05	0.008	0.14	0.00112	2.69%
1.15-1.175	0.14	0.05	0.007	0.15	0.00105	2.52%
		0.7				
						100.00%

0.04166

Liters/second                      41.66  
 US Gal/second                      11.01  
 US Gal/minute                      660.31  
 ft3/second                            1.47

ft3/day                                127107.01  
 Acre Feet/day                        2.92

**Data Double Checked December 3, 2008**  
**July 8 2008 at approximately 11:00 PST at Hydraulic Creek.**

Used 0.6 depth for flow meter.

Stilling Well = 0.346 m at 11:00 PST

Staff Gauge = 0.346 m at 11:00 PST

Hydraulic Creek

Station	(m) Water Depth	(m) width at depth	(m2) Flow Area	(m/s) velocity	(m3/s) Q	
2.75-2.80	0.07	0.1	0.007	0.14	0.00098	0.81%
2.90	0.16	0.1	0.016	0.23	0.00368	3.04%
3.00	0.17	0.1	0.017	0.52	0.00884	7.30%
3.10	0.16	0.1	0.016	0.44	0.00704	5.81%
3.20	0.19	0.1	0.019	0.52	0.00988	8.15%
3.30	0.20	0.1	0.020	0.30	0.00600	4.95%
3.40	0.18	0.1	0.018	0.33	0.00594	4.90%
3.50	0.15	0.1	0.015	0.43	0.00645	5.32%
3.60	0.16	0.1	0.016	0.55	0.00880	7.26%
3.70	0.18	0.1	0.018	0.51	0.00918	7.58%
3.80	0.19	0.1	0.019	0.48	0.00912	7.53%
3.90	0.14	0.1	0.014	0.32	0.00448	3.70%
4.00	0.13	0.1	0.013	0.25	0.00325	2.68%
4.10	0.14	0.1	0.014	0.24	0.00336	2.77%
4.20	0.14	0.1	0.014	0.33	0.00462	3.81%
4.30	0.12	0.1	0.012	0.37	0.00444	3.66%
4.40	0.14	0.1	0.014	0.55	0.00770	6.35%
4.50	0.10	0.1	0.010	0.54	0.00540	4.46%
4.60	0.09	0.1	0.009	0.53	0.00477	3.94%
4.70	0.10	0.1	0.010	0.13	0.00130	1.07%
4.80	0.09	0.1	0.009	0.17	0.00153	1.26%
4.90	0.06	0.1	0.006	0.26	0.00156	1.29%
5.00	0.06	0.1	0.006	0.27	0.00162	1.34%
5.10	0.07	0.1	0.007	0.13	0.00091	0.75%
5.2-5.25	0.04	0.1	0.004	0.08	0.00032	0.26%
		2.5				100.00%

0.12117

Liters/second 121.17  
 US Gal/second 32.01  
 US Gal/minute 1920.59  
 ft3/second 4.28  
  
 ft3/day 369705.37  
 Acre Feet/day 8.49



**Data Double Checked December 3, 2008**  
**August 12 2008 at approximately 9:50 at Stirling Creek.**

Used 0.6 depth for flow meter. Very Low Flow  
 0.103 Use for Staff Gauge Value  
 Stilling Well = 0.092 m deep at 9:50 PST  
 Staff Gauge = 0.091 m at 9:50 PST

Stirling Creek Ditch.

Station	(m) Water Depth	(m) width at depth	(m2) Flow Area	(m/s) velocity	(m3/s) Q	
.35-.40	0.01	0.1	0.001	0.01	0.000010	1.72%
0.50	0.02	0.1	0.002	0.01	0.000020	3.45%
0.60	0.03	0.1	0.003	0.03	0.000090	15.52%
0.70	0.04	0.1	0.004	0.02	0.000080	13.79%
0.80	0.04	0.1	0.004	0.06	0.000240	41.38%
0.90	0.03	0.1	0.003	0.04	0.000120	20.69%
1.0-1.05	0.02	0.1	0.002	0.01	0.000020	3.45%
		0.7				
						100.00%

0.000580

Liters/second 0.58  
 US Gal/second 0.15  
 US Gal/minute 9.19  
 ft3/second 0.02  
  
 ft3/day 1769.66  
 Acre Feet/day 0.04

**Data Double Checked December 3, 2008**

**August 12 2008 at approximately 11:15 PST at Canyon Creek.**

Used 0.6 depth for flow meter. Very Low Flow

Stilling Well = 0.225 m at 11:15 PST

Staff Gauge = 0.225 m at 11:15 PST

Canyon Creek

Station	(m) Water Depth	(m) width at depth	(m2) Flow Area	(m/s) velocity	(m3/s) Q	
.45-.50	0.05	0.1	0.005	0.01	0.00005	4.59%
0.6	0.06	0.1	0.006	0.02	0.00012	11.01%
0.7	0.06	0.1	0.006	0.03	0.00018	16.51%
0.8	0.07	0.1	0.007	0.04	0.00028	25.69%
0.9	0.05	0.1	0.005	0.05	0.00025	22.94%
1.0-1.05	0.07	0.1	0.007	0.03	0.00021	19.27%
		0.6				
						100.00%

0.00109

Liters/second 1.09

US Gal/second 0.29

US Gal/minute 17.28

ft3/second 0.04

ft3/day 3325.73

Acre Feet/day 0.08

**Data Double Checked December 3, 2008**

**August 12 2008 at approximately 10:25 PST at Hydraulic Creek.**

Used 0.6 depth for flow meter. Very Low Flow

Stilling Well = 0.232 m at 10:25 PST

Staff Gauge = 0.230 m at 10:25 PST

Hydraulic Creek

Station	(m) Water Depth	(m) width at depth	(m2) Flow Area	(m/s) velocity	(m3/s) Q	
.25-.30	0.04	0.1	0.004	0.01	0.00004	0.88%
0.40	0.08	0.1	0.008	0.04	0.00032	7.00%
0.50	0.10	0.1	0.010	0.05	0.00050	10.94%
0.60	0.10	0.1	0.010	0.06	0.00060	13.13%
0.70	0.11	0.1	0.011	0.05	0.00055	12.04%
0.80	0.10	0.1	0.010	0.12	0.00120	26.26%
0.90	0.09	0.1	0.009	0.09	0.00081	17.72%
1.0-1.05	0.11	0.1	0.011	0.05	0.00055	12.04%
		0.8				
						100.00%
					0.00457	

Liters/second 4.57  
 US Gal/second 1.21  
 US Gal/minute 72.44  
 ft3/second 0.16  
  
 ft3/day 13943.66  
 Acre Feet/day 0.32

**Data Double Checked December 3, 2008**

**September 29 2008 at approximately 11:40 PST at Pooley Creek.**

Used 0.6 depth for flow meter. Very Low Flow

Stilling Well = 0.326 m deep at 11:40 PST

Staff Gauge = 0.325 m at 11:40 PST

Pooley Creek Diversion.

Station	(m) Water Depth	(m) width at depth	(m2) Flow Area	(m/s) velocity	(m3/s) Q	
.25-.30	0.05	0.1	0.005	0.07	0.00035	7.93%
0.4	0.05	0.1	0.005	0.07	0.00035	7.93%
0.5	0.05	0.1	0.005	0.08	0.00040	9.06%
0.6	0.05	0.075	0.004	0.08	0.00030	6.80%
0.65	0.05	0.05	0.003	0.18	0.00045	10.19%
0.7	0.06	0.075	0.005	0.21	0.00095	21.40%
0.8	0.05	0.1	0.005	0.22	0.00110	24.92%
.9-.95	0.04	0.1	0.004	0.13	0.00052	11.78%
		0.7				
					0.00442	100.00%

Liters/second                      4.42  
 US Gal/second                      1.17  
 US Gal/minute                      69.98  
 ft3/second                            0.16  
  
 ft3/day                                13470.74  
 Acre Feet/day                        0.31



**Data Double Checked December 3, 2008**

**September 29 2008 at approximately 10:30 PST at Canyon Creek.**

Used 0.6 depth for flow meter. Very Low Flow

Stilling Well = 0.234 m at 10:30 PST

Staff Gauge = 0.236 m at 10:30 PST

**Canyon Creek**

Station	(m) Water Depth	(m) width at depth	(m2) Flow Area	(m/s) velocity	(m3/s) Q	
.35-.40	0.04	0.1	0.004	0.01	0.00004	7.27%
0.5	0.05	0.1	0.005	0.01	0.00005	9.09%
0.6	0.06	0.1	0.006	0.01	0.00006	10.91%
0.7	0.08	0.1	0.008	0.03	0.00024	43.64%
0.8	0.06	0.1	0.006	0.01	0.00006	10.91%
0.9	0.07	0.1	0.007	0.01	0.00007	12.73%
1.0-1.05	0.03	0.1	0.003	0.01	0.00003	5.45%
		0.7				
<b>Canyon Creek Staff and Thal = 0.234 m at 10:30 PST</b>						
Width	0.27 m					
Depth	0.05 m					100.00%
Velocity	Average	Run 1 m/s	Run 2 m/s	Run 3 m/s		
	0.110	0.1	0.13	0.1		
<b>Discharge</b>	<b>0.0015 m3/s</b>					
Use Above Value For Stage Q Chart and Table						

0.0006

Liters/second                      0.55  
 US Gal/second                      0.15  
 US Gal/minute                      8.72  
 ft3/second                            0.02

ft3/day                                    1678.12  
 Acre Feet/day                        0.04

**Data Double Checked December 3, 2008**

**September 29 2008 at approximately 9:50 PST at Hydraulic Creek.**

Used 0.6 depth for flow meter. Very Low Flow

Stilling Well = 0.225 m at 9:50 PST

Staff Gauge = 0.223 m at 9:50 PST

Hydraulic Creek

Station	(m) Water Depth	(m) width at depth	(m <sup>2</sup> ) Flow Area	(m/s) velocity	(m <sup>3</sup> /s) Q	
.15-.20	0.06	0.1	0.006	0.06	0.00036	14.63%
0.30	0.07	0.1	0.007	0.09	0.00063	25.61%
0.40	0.10	0.1	0.010	0.03	0.00030	12.20%
0.50	0.06	0.1	0.006	0.03	0.00018	7.32%
0.60	0.09	0.1	0.009	0.09	0.00081	32.93%
0.70	0.08	0.1	0.008	0.02	0.00016	6.50%
.80-.85	0.02	0.1	0.002	0.01	0.00002	0.81%
		0.7				
						100.00%

0.00246

Liters/second 2.46  
 US Gal/second 0.65  
 US Gal/minute 38.99  
 ft<sup>3</sup>/second 0.09  
  
 ft<sup>3</sup>/day 7505.78  
 Acre Feet/day 0.17

**Expanded Stage Discharge Table For Pooley Creek (2008)**

<b>Meters</b>	<b>0.000</b>	<b>0.001</b>	<b>0.002</b>	<b>0.003</b>	<b>0.004</b>	<b>0.005</b>	<b>0.006</b>	<b>0.007</b>	<b>0.008</b>	<b>0.009</b>	<b>Meters</b>
<b>0.30</b>	0.0000	0.0002	0.0003	0.0005	0.0007	0.0008	0.0010	0.0012	0.0013	0.0015	<b>0.30</b>
<b>0.31</b>	0.0017	0.0018	0.0020	0.0022	0.0023	0.0025	0.0027	0.0028	0.0030	0.0032	<b>0.31</b>
<b>0.32</b>	0.0033	0.0035	0.0036	0.0038	0.0039	0.0041	0.0042	0.0044	0.0045	0.0046	<b>0.32</b>
<b>0.33</b>	0.0048	0.0049	0.0051	0.0052	0.0054	0.0055	0.0057	0.0058	0.0060	0.0061	<b>0.33</b>
<b>0.34</b>	0.0063	0.0066	0.0070	0.0073	0.0077	0.0080	0.0084	0.0087	0.0091	0.0094	<b>0.34</b>
<b>0.35</b>	0.0098	0.0101	0.0105	0.0108	0.0112	0.0115	0.0119	0.0122	0.0126	0.0129	<b>0.35</b>
<b>0.36</b>	0.0133	0.0136	0.0140	0.0143	0.0146	0.0150	0.0153	0.0156	0.0160	0.0163	<b>0.36</b>
<b>0.37</b>	0.0167	0.0170	0.0173	0.0177	0.0180	0.0183	0.0187	0.0190	0.0193	0.0197	<b>0.37</b>
<b>0.38</b>	0.0200	0.0205	0.0210	0.0215	0.0220	0.0225	0.0230	0.0235	0.0240	0.0245	<b>0.38</b>
<b>0.39</b>	0.0250	0.0255	0.0260	0.0265	0.0270	0.0275	0.0280	0.0285	0.0290	0.0295	<b>0.39</b>
<b>0.40</b>	0.0300	0.0306	0.0312	0.0318	0.0324	0.0330	0.0336	0.0342	0.0348	0.0354	<b>0.40</b>
<b>0.41</b>	0.0360	0.0366	0.0372	0.0378	0.0384	0.0390	0.0396	0.0402	0.0408	0.0414	<b>0.41</b>
<b>0.42</b>	0.0420	0.0430	0.0439	0.0449	0.0458	0.0468	0.0477	0.0487	0.0496	0.0506	<b>0.42</b>
<b>0.43</b>	0.0515	0.0525	0.0534	0.0544	0.0553	0.0563	0.0572	0.0582	0.0591	0.0601	<b>0.43</b>
<b>0.44</b>	0.0610	0.0622	0.0634	0.0646	0.0658	0.0670	0.0682	0.0694	0.0706	0.0718	<b>0.44</b>
<b>0.45</b>	0.0730	0.0742	0.0754	0.0766	0.0778	0.0790	0.0802	0.0814	0.0826	0.0838	<b>0.45</b>
<b>0.46</b>	0.0850	0.0868	0.0885	0.0903	0.0920	0.0938	0.0955	0.0973	0.0990	0.1008	<b>0.46</b>
<b>0.47</b>	0.1025	0.1043	0.1060	0.1078	0.1095	0.1113	0.1130	0.1148	0.1165	0.1183	<b>0.47</b>
<b>0.48</b>	0.1200	0.1220	0.1240	0.1260	0.1280	0.1300	0.1320	0.1340	0.1360	0.1380	<b>0.48</b>
<b>0.49</b>	0.1400	0.1420	0.1440	0.1460	0.1480	0.1500	0.1520	0.1540	0.1560	0.1580	<b>0.49</b>
<b>0.50</b>	0.1600	0.1630	0.1660	0.1690	0.1720	0.1750	0.1780	0.1810	0.1840	0.1870	<b>0.50</b>
<b>0.51</b>	0.1900	0.1930	0.1960	0.1990	0.2020	0.2050	0.2080	0.2110	0.2140	0.2170	<b>0.51</b>
<b>0.52</b>	0.2200	0.2235	0.2270	0.2305	0.2340	0.2375	0.2410	0.2445	0.2480	0.2515	<b>0.52</b>
<b>0.53</b>	0.2550	0.2585	0.2620	0.2655	0.2690	0.2725	0.2760	0.2795	0.2830	0.2865	<b>0.53</b>
<b>0.54</b>	0.2900	0.2935	0.2970	0.3005	0.3040	0.3075	0.3110	0.3145	0.3180	0.3215	<b>0.54</b>
<b>0.55</b>	0.3250	0.3285	0.3320	0.3355	0.3390	0.3425	0.3460	0.3495	0.3530	0.3565	<b>0.55</b>
<b>0.56</b>	0.3600	0.3640	0.3680	0.3720	0.3760	0.3800	0.3840	0.3880	0.3920	0.3960	<b>0.56</b>
<b>0.57</b>	0.4000	0.4040	0.4080	0.4120	0.4160	0.4200	0.4240	0.4280	0.4320	0.4360	<b>0.57</b>
<b>0.58</b>	0.4400	0.4435	0.4470	0.4505	0.4540	0.4575	0.4610	0.4645	0.4680	0.4715	<b>0.58</b>
<b>0.59</b>	0.4750	0.4785	0.4820	0.4855	0.4890	0.4925	0.4960	0.4995	0.5030	0.5065	<b>0.59</b>
<b>0.60</b>	0.5100	0.5140	0.5180	0.5220	0.5260	0.5300	0.5340	0.5380	0.5420	0.5460	<b>0.60</b>
<b>0.61</b>	0.5500	0.5540	0.5580	0.5620	0.5660	0.5700	0.5740	0.5780	0.5820	0.5860	<b>0.61</b>
<b>0.62</b>	0.5900	0.5935	0.5970	0.6005	0.6040	0.6075	0.6110	0.6145	0.6180	0.6215	<b>0.62</b>
<b>0.63</b>	0.6250	0.6285	0.6320	0.6355	0.6390	0.6425	0.6460	0.6495	0.6530	0.6565	<b>0.63</b>
<b>0.64</b>	0.6600	0.6640	0.6680	0.6720	0.6760	0.6800	0.6840	0.6880	0.6920	0.6960	<b>0.64</b>
<b>0.65</b>	0.7000	0.7040	0.7080	0.7120	0.7160	0.7200	0.7240	0.7280	0.7320	0.7360	<b>0.65</b>

**Expanded Stage Discharge Table For Pooley Creek (2008)**

<b>Meters</b>	<b>0.000</b>	<b>0.001</b>	<b>0.002</b>	<b>0.003</b>	<b>0.004</b>	<b>0.005</b>	<b>0.006</b>	<b>0.007</b>	<b>0.008</b>	<b>0.009</b>	<b>Meters</b>
<b>0.66</b>	0.7400	0.7435	0.7470	0.7505	0.7540	0.7575	0.7610	0.7645	0.7680	0.7715	<b>0.66</b>
<b>0.67</b>	0.7750	0.7785	0.7820	0.7855	0.7890	0.7925	0.7960	0.7995	0.8030	0.8065	<b>0.67</b>
<b>0.68</b>	0.8100	0.8135	0.8170	0.8205	0.8240	0.8275	0.8310	0.8345	0.8380	0.8415	<b>0.68</b>
<b>0.69</b>	0.8450	0.8485	0.8520	0.8555	0.8590	0.8625	0.8660	0.8695	0.8730	0.8765	<b>0.69</b>
<b>0.70</b>	0.8800	0.8855	0.8909	0.8964	0.9018	0.9073	0.9127	0.9182	0.9236	0.9291	<b>0.70</b>
<b>0.71</b>	0.9345	0.9400	0.9454	0.9509	0.9563	0.9618	0.9672	0.9727	0.9781	0.9836	<b>0.71</b>
<b>0.72</b>	0.9890	0.9945	0.9999	1.0054	1.0108	1.0163	1.0217	1.0272	1.0326	1.0381	<b>0.72</b>
<b>0.73</b>	1.0435	1.0490	1.0544	1.0599	1.0653	1.0708	1.0762	1.0817	1.0871	1.0926	<b>0.73</b>
<b>0.74</b>	1.0980	1.1035	1.1089	1.1144	1.1198	1.1253	1.1307	1.1362	1.1416	1.1471	<b>0.74</b>
<b>0.75</b>	1.1525	1.1580	1.1634	1.1689	1.1743	1.1798	1.1852	1.1907	1.1961	1.2016	<b>0.75</b>
<b>0.76</b>	1.2070	1.2125	1.2179	1.2234	1.2288	1.2343	1.2397	1.2452	1.2506	1.2561	<b>0.76</b>
<b>0.77</b>	1.2615	1.2670	1.2724	1.2779	1.2833	1.2888	1.2942	1.2997	1.3051	1.3106	<b>0.77</b>
<b>0.78</b>	1.3160	1.3215	1.3269	1.3324	1.3378	1.3433	1.3487	1.3542	1.3596	1.3651	<b>0.78</b>
<b>0.79</b>	1.3705	1.3760	1.3814	1.3869	1.3923	1.3978	1.4032	1.4087	1.4141	1.4196	<b>0.79</b>
<b>0.80</b>	1.4250	1.4315	1.4380	1.4445	1.4510	1.4575	1.4640	1.4705	1.4770	1.4835	<b>0.80</b>
<b>0.81</b>	1.4900	1.4965	1.5030	1.5095	1.5160	1.5225	1.5290	1.5355	1.5420	1.5485	<b>0.81</b>
<b>0.82</b>	1.5550	1.5615	1.5680	1.5745	1.5810	1.5875	1.5940	1.6005	1.6070	1.6135	<b>0.82</b>
<b>0.83</b>	1.6200	1.6265	1.6330	1.6395	1.6460	1.6525	1.6590	1.6655	1.6720	1.6785	<b>0.83</b>
<b>0.84</b>	1.6850	1.6915	1.6980	1.7045	1.7110	1.7175	1.7240	1.7305	1.7370	1.7435	<b>0.84</b>
<b>0.85</b>	1.7500	1.7565	1.7630	1.7695	1.7760	1.7825	1.7890	1.7955	1.8020	1.8085	<b>0.85</b>
<b>0.86</b>	1.8150	1.8215	1.8280	1.8345	1.8410	1.8475	1.8540	1.8605	1.8670	1.8735	<b>0.86</b>
<b>0.87</b>	1.8800	1.8865	1.8930	1.8995	1.9060	1.9125	1.9190	1.9255	1.9320	1.9385	<b>0.87</b>
<b>0.88</b>	1.9450	1.9515	1.9580	1.9645	1.9710	1.9775	1.9840	1.9905	1.9970	2.0035	<b>0.88</b>
<b>0.89</b>	2.0100	2.0165	2.0230	2.0295	2.0360	2.0425	2.0490	2.0555	2.0620	2.0685	<b>0.89</b>
<b>0.90</b>	2.0750	2.0835	2.0920	2.1005	2.1090	2.1175	2.1260	2.1345	2.1430	2.1515	<b>0.90</b>
<b>0.91</b>	2.1600	2.1685	2.1770	2.1855	2.1940	2.2025	2.2110	2.2195	2.2280	2.2365	<b>0.91</b>
<b>0.92</b>	2.2450	2.2535	2.2620	2.2705	2.2790	2.2875	2.2960	2.3045	2.3130	2.3215	<b>0.92</b>
<b>0.93</b>	2.3300	2.3385	2.3470	2.3555	2.3640	2.3725	2.3810	2.3895	2.3980	2.4065	<b>0.93</b>
<b>0.94</b>	2.4150	2.4235	2.4320	2.4405	2.4490	2.4575	2.4660	2.4745	2.4830	2.4915	<b>0.94</b>
<b>0.95</b>	2.5000	2.5085	2.5170	2.5255	2.5340	2.5425	2.5510	2.5595	2.5680	2.5765	<b>0.95</b>
<b>0.96</b>	2.5850	2.5935	2.6020	2.6105	2.6190	2.6275	2.6360	2.6445	2.6530	2.6615	<b>0.96</b>
<b>0.97</b>	2.6700	2.6785	2.6870	2.6955	2.7040	2.7125	2.7210	2.7295	2.7380	2.7465	<b>0.97</b>
<b>0.98</b>	2.7550	2.7635	2.7720	2.7805	2.7890	2.7975	2.8060	2.8145	2.8230	2.8315	<b>0.98</b>
<b>0.99</b>	2.8400	2.8485	2.8570	2.8655	2.8740	2.8825	2.8910	2.8995	2.9080	2.9165	<b>0.99</b>
<b>1.00</b>	2.9250	2.9335	2.9420	2.9505	2.9590	2.9675	2.9760	2.9845	2.9930	3.0015	<b>1.00</b>

**Expanded Stage Discharge Table For Stirling Creek (2008)**

<b>Meters</b>	<b>0.000</b>	<b>0.001</b>	<b>0.002</b>	<b>0.003</b>	<b>0.004</b>	<b>0.005</b>	<b>0.006</b>	<b>0.007</b>	<b>0.008</b>	<b>0.009</b>	<b>Meters</b>
<b>0.10</b>	0.0000	0.0003	0.0005	0.0008	0.0010	0.0013	0.0015	0.0018	0.0020	0.0023	<b>0.10</b>
<b>0.11</b>	0.0025	0.0028	0.0030	0.0033	0.0035	0.0038	0.0040	0.0043	0.0045	0.0048	<b>0.11</b>
<b>0.12</b>	0.0050	0.0057	0.0063	0.0070	0.0076	0.0083	0.0089	0.0096	0.0102	0.0109	<b>0.12</b>
<b>0.13</b>	0.0115	0.0122	0.0128	0.0135	0.0141	0.0148	0.0154	0.0161	0.0167	0.0174	<b>0.13</b>
<b>0.14</b>	0.0180	0.0189	0.0197	0.0206	0.0214	0.0223	0.0231	0.0240	0.0248	0.0257	<b>0.14</b>
<b>0.15</b>	0.0265	0.0274	0.0282	0.0291	0.0299	0.0308	0.0316	0.0325	0.0333	0.0342	<b>0.15</b>
<b>0.16</b>	0.0350	0.0355	0.0360	0.0365	0.0370	0.0375	0.0380	0.0385	0.0390	0.0395	<b>0.16</b>
<b>0.17</b>	0.0400	0.0405	0.0410	0.0415	0.0420	0.0425	0.0430	0.0435	0.0440	0.0445	<b>0.17</b>
<b>0.18</b>	0.0450	0.0468	0.0485	0.0503	0.0520	0.0538	0.0555	0.0573	0.0590	0.0608	<b>0.18</b>
<b>0.19</b>	0.0625	0.0643	0.0660	0.0678	0.0695	0.0713	0.0730	0.0748	0.0765	0.0783	<b>0.19</b>
<b>0.20</b>	0.0800	0.0813	0.0825	0.0838	0.0850	0.0863	0.0875	0.0888	0.0900	0.0913	<b>0.20</b>
<b>0.21</b>	0.0925	0.0938	0.0950	0.0963	0.0975	0.0988	0.1000	0.1013	0.1025	0.1038	<b>0.21</b>
<b>0.22</b>	0.1050	0.1068	0.1085	0.1103	0.1120	0.1138	0.1155	0.1173	0.1190	0.1208	<b>0.22</b>
<b>0.23</b>	0.1225	0.1243	0.1260	0.1278	0.1295	0.1313	0.1330	0.1348	0.1365	0.1383	<b>0.23</b>
<b>0.24</b>	0.1400	0.1425	0.1450	0.1475	0.1500	0.1525	0.1550	0.1575	0.1600	0.1625	<b>0.24</b>
<b>0.25</b>	0.1650	0.1675	0.1700	0.1725	0.1750	0.1775	0.1800	0.1825	0.1850	0.1875	<b>0.25</b>
<b>0.26</b>	0.1900	0.1928	0.1955	0.1983	0.2010	0.2038	0.2065	0.2093	0.2120	0.2148	<b>0.26</b>
<b>0.27</b>	0.2175	0.2203	0.2230	0.2258	0.2285	0.2313	0.2340	0.2368	0.2395	0.2423	<b>0.27</b>
<b>0.28</b>	0.2450	0.2475	0.2500	0.2525	0.2550	0.2575	0.2600	0.2625	0.2650	0.2675	<b>0.28</b>
<b>0.29</b>	0.2700	0.2725	0.2750	0.2775	0.2800	0.2825	0.2850	0.2875	0.2900	0.2925	<b>0.29</b>
<b>0.30</b>	0.2950	0.2978	0.3005	0.3033	0.3060	0.3088	0.3115	0.3143	0.3170	0.3198	<b>0.30</b>
<b>0.31</b>	0.3225	0.3253	0.3280	0.3308	0.3335	0.3363	0.3390	0.3418	0.3445	0.3473	<b>0.31</b>
<b>0.32</b>	0.3500	0.3528	0.3555	0.3583	0.3610	0.3638	0.3665	0.3693	0.3720	0.3748	<b>0.32</b>
<b>0.33</b>	0.3775	0.3803	0.3830	0.3858	0.3885	0.3913	0.3940	0.3968	0.3995	0.4023	<b>0.33</b>
<b>0.34</b>	0.4050	0.4078	0.4105	0.4133	0.4160	0.4188	0.4215	0.4243	0.4270	0.4298	<b>0.34</b>
<b>0.35</b>	0.4325	0.4353	0.4380	0.4408	0.4435	0.4463	0.4490	0.4518	0.4545	0.4573	<b>0.35</b>
<b>0.36</b>	0.4600	0.4625	0.4650	0.4675	0.4700	0.4725	0.4750	0.4775	0.4800	0.4825	<b>0.36</b>
<b>0.37</b>	0.4850	0.4875	0.4900	0.4925	0.4950	0.4975	0.5000	0.5025	0.5050	0.5075	<b>0.37</b>
<b>0.38</b>	0.5100	0.5128	0.5155	0.5183	0.5210	0.5238	0.5265	0.5293	0.5320	0.5348	<b>0.38</b>
<b>0.39</b>	0.5375	0.5403	0.5430	0.5458	0.5485	0.5513	0.5540	0.5568	0.5595	0.5623	<b>0.39</b>
<b>0.40</b>	0.5650	0.5688	0.5727	0.5765	0.5803	0.5842	0.5880	0.5918	0.5956	0.5995	<b>0.40</b>
<b>0.41</b>	0.6033	0.6071	0.6110	0.6148	0.6186	0.6225	0.6263	0.6301	0.6339	0.6378	<b>0.41</b>
<b>0.42</b>	0.6416	0.6454	0.6493	0.6531	0.6569	0.6608	0.6646	0.6684	0.6722	0.6761	<b>0.42</b>
<b>0.43</b>	0.6799	0.6837	0.6876	0.6914	0.6952	0.6991	0.7029	0.7067	0.7105	0.7144	<b>0.43</b>

**Expanded Stage Discharge Table For Stirling Creek (2008)**

<b>Meters</b>	<b>0.000</b>	<b>0.001</b>	<b>0.002</b>	<b>0.003</b>	<b>0.004</b>	<b>0.005</b>	<b>0.006</b>	<b>0.007</b>	<b>0.008</b>	<b>0.009</b>	<b>Meters</b>
<b>0.44</b>	0.7182	0.7220	0.7259	0.7297	0.7335	0.7374	0.7412	0.7450	0.7488	0.7527	<b>0.44</b>
<b>0.45</b>	0.7565	0.7603	0.7642	0.7680	0.7718	0.7757	0.7795	0.7833	0.7871	0.7910	<b>0.45</b>
<b>0.46</b>	0.7948	0.7986	0.8025	0.8063	0.8101	0.8140	0.8178	0.8216	0.8254	0.8293	<b>0.46</b>
<b>0.47</b>	0.8331	0.8369	0.8408	0.8446	0.8484	0.8523	0.8561	0.8599	0.8637	0.8676	<b>0.47</b>
<b>0.48</b>	0.8714	0.8752	0.8791	0.8829	0.8867	0.8906	0.8944	0.8982	0.9020	0.9059	<b>0.48</b>
<b>0.49</b>	0.9097	0.9135	0.9174	0.9212	0.9250	0.9289	0.9327	0.9365	0.9403	0.9442	<b>0.49</b>
<b>0.50</b>	0.9480	0.9536	0.9592	0.9649	0.9705	0.9761	0.9817	0.9873	0.9930	0.9986	<b>0.50</b>
<b>0.51</b>	1.0042	1.0098	1.0154	1.0211	1.0267	1.0323	1.0379	1.0435	1.0492	1.0548	<b>0.51</b>
<b>0.52</b>	1.0604	1.0660	1.0716	1.0773	1.0829	1.0885	1.0941	1.0997	1.1054	1.1110	<b>0.52</b>
<b>0.53</b>	1.1166	1.1222	1.1278	1.1335	1.1391	1.1447	1.1503	1.1559	1.1616	1.1672	<b>0.53</b>
<b>0.54</b>	1.1728	1.1784	1.1840	1.1897	1.1953	1.2009	1.2065	1.2121	1.2178	1.2234	<b>0.54</b>
<b>0.55</b>	1.2290	1.2346	1.2402	1.2459	1.2515	1.2571	1.2627	1.2683	1.2740	1.2796	<b>0.55</b>
<b>0.56</b>	1.2852	1.2908	1.2964	1.3021	1.3077	1.3133	1.3189	1.3245	1.3302	1.3358	<b>0.56</b>
<b>0.57</b>	1.3414	1.3470	1.3526	1.3583	1.3639	1.3695	1.3751	1.3807	1.3864	1.3920	<b>0.57</b>
<b>0.58</b>	1.3976	1.4032	1.4088	1.4145	1.4201	1.4257	1.4313	1.4369	1.4426	1.4482	<b>0.58</b>
<b>0.59</b>	1.4538	1.4594	1.4650	1.4707	1.4763	1.4819	1.4875	1.4931	1.4988	1.5044	<b>0.59</b>
<b>0.60</b>	1.5100	1.5171	1.5242	1.5312	1.5383	1.5454	1.5525	1.5596	1.5666	1.5737	<b>0.60</b>
<b>0.61</b>	1.5808	1.5879	1.5950	1.6020	1.6091	1.6162	1.6233	1.6304	1.6374	1.6445	<b>0.61</b>
<b>0.62</b>	1.6516	1.6587	1.6658	1.6728	1.6799	1.6870	1.6941	1.7012	1.7082	1.7153	<b>0.62</b>
<b>0.63</b>	1.7224	1.7295	1.7366	1.7436	1.7507	1.7578	1.7649	1.7720	1.7790	1.7861	<b>0.63</b>
<b>0.64</b>	1.7932	1.8003	1.8074	1.8144	1.8215	1.8286	1.8357	1.8428	1.8498	1.8569	<b>0.64</b>
<b>0.65</b>	1.8640	1.8711	1.8782	1.8852	1.8923	1.8994	1.9065	1.9136	1.9206	1.9277	<b>0.65</b>
<b>0.66</b>	1.9348	1.9419	1.9490	1.9560	1.9631	1.9702	1.9773	1.9844	1.9914	1.9985	<b>0.66</b>
<b>0.67</b>	2.0056	2.0127	2.0198	2.0268	2.0339	2.0410	2.0481	2.0552	2.0622	2.0693	<b>0.67</b>
<b>0.68</b>	2.0764	2.0835	2.0906	2.0976	2.1047	2.1118	2.1189	2.1260	2.1330	2.1401	<b>0.68</b>
<b>0.69</b>	2.1472	2.1543	2.1614	2.1684	2.1755	2.1826	2.1897	2.1968	2.2038	2.2109	<b>0.69</b>
<b>0.70</b>	2.2180	2.2270	2.2360	2.2451	2.2541	2.2631	2.2721	2.2811	2.2902	2.2992	<b>0.70</b>
<b>0.71</b>	2.3082	2.3172	2.3262	2.3353	2.3443	2.3533	2.3623	2.3713	2.3804	2.3894	<b>0.71</b>
<b>0.72</b>	2.3984	2.4074	2.4164	2.4255	2.4345	2.4435	2.4525	2.4615	2.4706	2.4796	<b>0.72</b>
<b>0.73</b>	2.4886	2.4976	2.5066	2.5157	2.5247	2.5337	2.5427	2.5517	2.5608	2.5698	<b>0.73</b>
<b>0.74</b>	2.5788	2.5878	2.5968	2.6059	2.6149	2.6239	2.6329	2.6419	2.6510	2.6600	<b>0.74</b>
<b>0.75</b>	2.6690	2.6780	2.6870	2.6961	2.7051	2.7141	2.7231	2.7321	2.7412	2.7502	<b>0.75</b>
<b>0.76</b>	2.7592	2.7682	2.7772	2.7863	2.7953	2.8043	2.8133	2.8223	2.8314	2.8404	<b>0.76</b>
<b>0.77</b>	2.8494	2.8584	2.8674	2.8765	2.8855	2.8945	2.9035	2.9125	2.9216	2.9306	<b>0.77</b>

**Expanded Stage Discharge Table For Stirling Creek (2008)**

<b>Meters</b>	<b>0.000</b>	<b>0.001</b>	<b>0.002</b>	<b>0.003</b>	<b>0.004</b>	<b>0.005</b>	<b>0.006</b>	<b>0.007</b>	<b>0.008</b>	<b>0.009</b>	<b>Meters</b>
<b>0.78</b>	2.9396	2.9486	2.9576	2.9667	2.9757	2.9847	2.9937	3.0027	3.0118	3.0208	<b>0.78</b>
<b>0.79</b>	3.0298	3.0388	3.0478	3.0569	3.0659	3.0749	3.0839	3.0929	3.1020	3.1110	<b>0.79</b>
<b>0.80</b>	3.1200	3.1303	3.1406	3.1509	3.1612	3.1715	3.1818	3.1921	3.2024	3.2127	<b>0.80</b>
<b>0.81</b>	3.2230	3.2333	3.2436	3.2539	3.2642	3.2745	3.2848	3.2951	3.3054	3.3157	<b>0.81</b>
<b>0.82</b>	3.3260	3.3363	3.3466	3.3569	3.3672	3.3775	3.3878	3.3981	3.4084	3.4187	<b>0.82</b>
<b>0.83</b>	3.4290	3.4393	3.4496	3.4599	3.4702	3.4805	3.4908	3.5011	3.5114	3.5217	<b>0.83</b>
<b>0.84</b>	3.5320	3.5423	3.5526	3.5629	3.5732	3.5835	3.5938	3.6041	3.6144	3.6247	<b>0.84</b>
<b>0.85</b>	3.6350	3.6453	3.6556	3.6659	3.6762	3.6865	3.6968	3.7071	3.7174	3.7277	<b>0.85</b>
<b>0.86</b>	3.7380	3.7483	3.7586	3.7689	3.7792	3.7895	3.7998	3.8101	3.8204	3.8307	<b>0.86</b>
<b>0.87</b>	3.8410	3.8513	3.8616	3.8719	3.8822	3.8925	3.9028	3.9131	3.9234	3.9337	<b>0.87</b>
<b>0.88</b>	3.9440	3.9543	3.9646	3.9749	3.9852	3.9955	4.0058	4.0161	4.0264	4.0367	<b>0.88</b>
<b>0.89</b>	4.0470	4.0573	4.0676	4.0779	4.0882	4.0985	4.1088	4.1191	4.1294	4.1397	<b>0.89</b>
<b>0.90</b>	4.1500	4.1637	4.1774	4.1911	4.2048	4.2185	4.2322	4.2459	4.2596	4.2733	<b>0.90</b>
<b>0.91</b>	4.2870	4.3007	4.3144	4.3281	4.3418	4.3555	4.3692	4.3829	4.3966	4.4103	<b>0.91</b>
<b>0.92</b>	4.4240	4.4377	4.4514	4.4651	4.4788	4.4925	4.5062	4.5199	4.5336	4.5473	<b>0.92</b>
<b>0.93</b>	4.5610	4.5747	4.5884	4.6021	4.6158	4.6295	4.6432	4.6569	4.6706	4.6843	<b>0.93</b>
<b>0.94</b>	4.6980	4.7117	4.7254	4.7391	4.7528	4.7665	4.7802	4.7939	4.8076	4.8213	<b>0.94</b>
<b>0.95</b>	4.8350	4.8487	4.8624	4.8761	4.8898	4.9035	4.9172	4.9309	4.9446	4.9583	<b>0.95</b>
<b>0.96</b>	4.9720	4.9857	4.9994	5.0131	5.0268	5.0405	5.0542	5.0679	5.0816	5.0953	<b>0.96</b>
<b>0.97</b>	5.1090	5.1227	5.1364	5.1501	5.1638	5.1775	5.1912	5.2049	5.2186	5.2323	<b>0.97</b>
<b>0.98</b>	5.2460	5.2597	5.2734	5.2871	5.3008	5.3145	5.3282	5.3419	5.3556	5.3693	<b>0.98</b>
<b>0.99</b>	5.3830	5.3967	5.4104	5.4241	5.4378	5.4515	5.4652	5.4789	5.4926	5.5063	<b>0.99</b>
<b>1.00</b>	5.5200	5.5337	5.5474	5.5611	5.5748	5.5885	5.6022	5.6159	5.6296	5.6433	<b>1.00</b>

**Expanded Stage Discharge Table For Canyon Creek (2008)**

<b>Meters</b>	<b>0.000</b>	<b>0.001</b>	<b>0.002</b>	<b>0.003</b>	<b>0.004</b>	<b>0.005</b>	<b>0.006</b>	<b>0.007</b>	<b>0.008</b>	<b>0.009</b>	<b>Meters</b>
<b>0.16</b>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	<b>0.16</b>
<b>0.17</b>	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	<b>0.17</b>
<b>0.18</b>	0.0002	0.0002	0.0002	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0004	<b>0.18</b>
<b>0.19</b>	0.0004	0.0004	0.0004	0.0004	0.0005	0.0005	0.0005	0.0005	0.0005	0.0006	<b>0.19</b>
<b>0.20</b>	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0007	0.0007	0.0007	0.0007	<b>0.20</b>
<b>0.21</b>	0.0007	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0009	0.0009	0.0009	<b>0.21</b>
<b>0.22</b>	0.0009	0.0011	0.0012	0.0014	0.0015	0.0017	0.0018	0.0020	0.0021	0.0023	<b>0.22</b>
<b>0.23</b>	0.0025	0.0026	0.0028	0.0029	0.0031	0.0032	0.0034	0.0035	0.0037	0.0038	<b>0.23</b>
<b>0.24</b>	0.0040	0.0043	0.0046	0.0048	0.0051	0.0054	0.0057	0.0059	0.0062	0.0065	<b>0.24</b>
<b>0.25</b>	0.0068	0.0070	0.0073	0.0076	0.0079	0.0081	0.0084	0.0087	0.0090	0.0092	<b>0.25</b>
<b>0.26</b>	0.0095	0.0098	0.0102	0.0105	0.0108	0.0111	0.0115	0.0118	0.0121	0.0124	<b>0.26</b>
<b>0.27</b>	0.0128	0.0131	0.0134	0.0137	0.0141	0.0144	0.0147	0.0150	0.0154	0.0157	<b>0.27</b>
<b>0.28</b>	0.0160	0.0164	0.0167	0.0171	0.0174	0.0178	0.0181	0.0185	0.0188	0.0192	<b>0.28</b>
<b>0.29</b>	0.0195	0.0199	0.0202	0.0206	0.0209	0.0213	0.0216	0.0220	0.0223	0.0227	<b>0.29</b>
<b>0.30</b>	0.0230	0.0235	0.0240	0.0245	0.0250	0.0255	0.0260	0.0265	0.0270	0.0275	<b>0.30</b>
<b>0.31</b>	0.0280	0.0285	0.0290	0.0295	0.0300	0.0305	0.0310	0.0315	0.0320	0.0325	<b>0.31</b>
<b>0.32</b>	0.0330	0.0336	0.0341	0.0347	0.0352	0.0358	0.0363	0.0369	0.0374	0.0380	<b>0.32</b>
<b>0.33</b>	0.0385	0.0391	0.0396	0.0402	0.0407	0.0413	0.0418	0.0424	0.0429	0.0435	<b>0.33</b>
<b>0.34</b>	0.0440	0.0453	0.0465	0.0478	0.0490	0.0503	0.0515	0.0528	0.0540	0.0553	<b>0.34</b>
<b>0.35</b>	0.0565	0.0578	0.0590	0.0603	0.0615	0.0628	0.0640	0.0653	0.0665	0.0678	<b>0.35</b>
<b>0.36</b>	0.0690	0.0716	0.0741	0.0767	0.0792	0.0818	0.0843	0.0869	0.0894	0.0920	<b>0.36</b>
<b>0.37</b>	0.0945	0.0971	0.0996	0.1022	0.1047	0.1073	0.1098	0.1124	0.1149	0.1175	<b>0.37</b>
<b>0.38</b>	0.1200	0.1213	0.1225	0.1238	0.1250	0.1263	0.1275	0.1288	0.1300	0.1313	<b>0.38</b>
<b>0.39</b>	0.1325	0.1338	0.1350	0.1363	0.1375	0.1388	0.1400	0.1413	0.1425	0.1438	<b>0.39</b>
<b>0.40</b>	0.1450	0.1464	0.1477	0.1491	0.1504	0.1518	0.1531	0.1545	0.1558	0.1572	<b>0.40</b>
<b>0.41</b>	0.1585	0.1599	0.1612	0.1626	0.1639	0.1653	0.1666	0.1680	0.1693	0.1707	<b>0.41</b>
<b>0.42</b>	0.1720	0.1735	0.1750	0.1765	0.1780	0.1795	0.1810	0.1825	0.1840	0.1855	<b>0.42</b>
<b>0.43</b>	0.1870	0.1885	0.1900	0.1915	0.1930	0.1945	0.1960	0.1975	0.1990	0.2005	<b>0.43</b>
<b>0.44</b>	0.2020	0.2039	0.2058	0.2077	0.2096	0.2115	0.2134	0.2153	0.2172	0.2191	<b>0.44</b>
<b>0.45</b>	0.2210	0.2229	0.2248	0.2267	0.2286	0.2305	0.2324	0.2343	0.2362	0.2381	<b>0.45</b>
<b>0.46</b>	0.2400	0.2420	0.2440	0.2460	0.2480	0.2500	0.2520	0.2540	0.2560	0.2580	<b>0.46</b>
<b>0.47</b>	0.2600	0.2620	0.2640	0.2660	0.2680	0.2700	0.2720	0.2740	0.2760	0.2780	<b>0.47</b>
<b>0.48</b>	0.2800	0.2820	0.2840	0.2860	0.2880	0.2900	0.2920	0.2940	0.2960	0.2980	<b>0.48</b>
<b>0.49</b>	0.3000	0.3020	0.3040	0.3060	0.3080	0.3100	0.3120	0.3140	0.3160	0.3180	<b>0.49</b>

**Expanded Stage Discharge Table For Canyon Creek (2008)**

<b>Meters</b>	<b>0.000</b>	<b>0.001</b>	<b>0.002</b>	<b>0.003</b>	<b>0.004</b>	<b>0.005</b>	<b>0.006</b>	<b>0.007</b>	<b>0.008</b>	<b>0.009</b>	<b>Meters</b>
<b>0.50</b>	0.3200	0.3215	0.3230	0.3245	0.3260	0.3275	0.3290	0.3305	0.3320	0.3335	<b>0.50</b>
<b>0.51</b>	0.3350	0.3365	0.3380	0.3395	0.3410	0.3425	0.3440	0.3455	0.3470	0.3485	<b>0.51</b>
<b>0.52</b>	0.3500	0.3520	0.3540	0.3560	0.3580	0.3600	0.3620	0.3640	0.3660	0.3680	<b>0.52</b>
<b>0.53</b>	0.3700	0.3720	0.3740	0.3760	0.3780	0.3800	0.3820	0.3840	0.3860	0.3880	<b>0.53</b>
<b>0.54</b>	0.3900	0.3925	0.3950	0.3975	0.4000	0.4025	0.4050	0.4075	0.4100	0.4125	<b>0.54</b>
<b>0.55</b>	0.4150	0.4175	0.4200	0.4225	0.4250	0.4275	0.4300	0.4325	0.4350	0.4375	<b>0.55</b>
<b>0.56</b>	0.4400	0.4420	0.4440	0.4460	0.4480	0.4500	0.4520	0.4540	0.4560	0.4580	<b>0.56</b>
<b>0.57</b>	0.4600	0.4620	0.4640	0.4660	0.4680	0.4700	0.4720	0.4740	0.4760	0.4780	<b>0.57</b>
<b>0.58</b>	0.4800	0.4820	0.4840	0.4860	0.4880	0.4900	0.4920	0.4940	0.4960	0.4980	<b>0.58</b>
<b>0.59</b>	0.5000	0.5020	0.5040	0.5060	0.5080	0.5100	0.5120	0.5140	0.5160	0.5180	<b>0.59</b>
<b>0.60</b>	0.5200	0.5220	0.5240	0.5260	0.5280	0.5300	0.5320	0.5340	0.5360	0.5380	<b>0.60</b>
<b>0.61</b>	0.5400	0.5420	0.5440	0.5460	0.5480	0.5500	0.5520	0.5540	0.5560	0.5580	<b>0.61</b>
<b>0.62</b>	0.5600	0.5630	0.5660	0.5690	0.5720	0.5750	0.5780	0.5810	0.5840	0.5870	<b>0.62</b>
<b>0.63</b>	0.5900	0.5930	0.5960	0.5990	0.6020	0.6050	0.6080	0.6110	0.6140	0.6170	<b>0.63</b>
<b>0.64</b>	0.6200	0.6225	0.6250	0.6275	0.6300	0.6325	0.6350	0.6375	0.6400	0.6425	<b>0.64</b>
<b>0.65</b>	0.6450	0.6475	0.6500	0.6525	0.6550	0.6575	0.6600	0.6625	0.6650	0.6675	<b>0.65</b>
<b>0.66</b>	0.6700	0.6725	0.6750	0.6775	0.6800	0.6825	0.6850	0.6875	0.6900	0.6925	<b>0.66</b>
<b>0.67</b>	0.6950	0.6975	0.7000	0.7025	0.7050	0.7075	0.7100	0.7125	0.7150	0.7175	<b>0.67</b>
<b>0.68</b>	0.7200	0.7230	0.7260	0.7290	0.7320	0.7350	0.7380	0.7410	0.7440	0.7470	<b>0.68</b>
<b>0.69</b>	0.7500	0.7530	0.7560	0.7590	0.7620	0.7650	0.7680	0.7710	0.7740	0.7770	<b>0.69</b>
<b>0.70</b>	0.7800	0.7825	0.7850	0.7875	0.7900	0.7925	0.7950	0.7975	0.8000	0.8025	<b>0.70</b>
<b>0.71</b>	0.8050	0.8075	0.8100	0.8125	0.8150	0.8175	0.8200	0.8225	0.8250	0.8275	<b>0.71</b>
<b>0.72</b>	0.8300	0.8325	0.8350	0.8375	0.8400	0.8425	0.8450	0.8475	0.8500	0.8525	<b>0.72</b>
<b>0.73</b>	0.8550	0.8575	0.8600	0.8625	0.8650	0.8675	0.8700	0.8725	0.8750	0.8775	<b>0.73</b>
<b>0.74</b>	0.8800	0.8825	0.8850	0.8875	0.8900	0.8925	0.8950	0.8975	0.9000	0.9025	<b>0.74</b>
<b>0.75</b>	0.9050	0.9075	0.9100	0.9125	0.9150	0.9175	0.9200	0.9225	0.9250	0.9275	<b>0.75</b>
<b>0.76</b>	0.9300	0.9325	0.9350	0.9375	0.9400	0.9425	0.9450	0.9475	0.9500	0.9525	<b>0.76</b>
<b>0.77</b>	0.9550	0.9575	0.9600	0.9625	0.9650	0.9675	0.9700	0.9725	0.9750	0.9775	<b>0.77</b>
<b>0.78</b>	0.9800	0.9847	0.9895	0.9942	0.9990	1.0037	1.0085	1.0132	1.0180	1.0227	<b>0.78</b>
<b>0.79</b>	1.0275	1.0322	1.0370	1.0417	1.0465	1.0512	1.0560	1.0607	1.0655	1.0702	<b>0.79</b>
<b>0.80</b>	1.0750	1.0790	1.0830	1.0870	1.0910	1.0950	1.0990	1.1030	1.1070	1.1110	<b>0.80</b>
<b>0.81</b>	1.1150	1.1190	1.1230	1.1270	1.1310	1.1350	1.1390	1.1430	1.1470	1.1510	<b>0.81</b>
<b>0.82</b>	1.1550	1.1590	1.1630	1.1670	1.1710	1.1750	1.1790	1.1830	1.1870	1.1910	<b>0.82</b>
<b>0.83</b>	1.1950	1.1990	1.2030	1.2070	1.2110	1.2150	1.2190	1.2230	1.2270	1.2310	<b>0.83</b>

**Expanded Stage Discharge Table For Canyon Creek (2008)**

<b>Meters</b>	<b>0.000</b>	<b>0.001</b>	<b>0.002</b>	<b>0.003</b>	<b>0.004</b>	<b>0.005</b>	<b>0.006</b>	<b>0.007</b>	<b>0.008</b>	<b>0.009</b>	<b>Meters</b>
<b>0.84</b>	1.2350	1.2390	1.2430	1.2470	1.2510	1.2550	1.2590	1.2630	1.2670	1.2710	<b>0.84</b>
<b>0.85</b>	1.2750	1.2790	1.2830	1.2870	1.2910	1.2950	1.2990	1.3030	1.3070	1.3110	<b>0.85</b>
<b>0.86</b>	1.3150	1.3190	1.3230	1.3270	1.3310	1.3350	1.3390	1.3430	1.3470	1.3510	<b>0.86</b>
<b>0.87</b>	1.3550	1.3590	1.3630	1.3670	1.3710	1.3750	1.3790	1.3830	1.3870	1.3910	<b>0.87</b>
<b>0.88</b>	1.3950	1.3990	1.4030	1.4070	1.4110	1.4150	1.4190	1.4230	1.4270	1.4310	<b>0.88</b>
<b>0.89</b>	1.4350	1.4390	1.4430	1.4470	1.4510	1.4550	1.4590	1.4630	1.4670	1.4710	<b>0.89</b>
<b>0.90</b>	1.4750	1.4803	1.4855	1.4908	1.4960	1.5013	1.5065	1.5118	1.5170	1.5222	<b>0.90</b>
<b>0.91</b>	1.5275	1.5327	1.5380	1.5432	1.5485	1.5537	1.5590	1.5642	1.5695	1.5747	<b>0.91</b>
<b>0.92</b>	1.5800	1.5852	1.5905	1.5957	1.6010	1.6062	1.6115	1.6167	1.6220	1.6272	<b>0.92</b>
<b>0.93</b>	1.6325	1.6377	1.6430	1.6482	1.6535	1.6587	1.6640	1.6692	1.6745	1.6797	<b>0.93</b>
<b>0.94</b>	1.6850	1.6902	1.6955	1.7007	1.7060	1.7112	1.7165	1.7217	1.7270	1.7322	<b>0.94</b>
<b>0.95</b>	1.7375	1.7427	1.7480	1.7532	1.7585	1.7637	1.7690	1.7742	1.7795	1.7847	<b>0.95</b>
<b>0.96</b>	1.7900	1.7952	1.8005	1.8057	1.8110	1.8162	1.8215	1.8267	1.8320	1.8372	<b>0.96</b>
<b>0.97</b>	1.8425	1.8477	1.8530	1.8582	1.8635	1.8687	1.8740	1.8792	1.8845	1.8897	<b>0.97</b>
<b>0.98</b>	1.8950	1.9002	1.9055	1.9107	1.9160	1.9212	1.9265	1.9317	1.9370	1.9422	<b>0.98</b>
<b>0.99</b>	1.9475	1.9527	1.9580	1.9632	1.9685	1.9737	1.9790	1.9842	1.9895	1.9947	<b>0.99</b>
<b>1.00</b>	2.0000	2.0052	2.0105	2.0157	2.0210	2.0262	2.0315	2.0367	2.0420	2.0472	<b>1.00</b>
<b>1.01</b>	2.0525	2.0578	2.0630	2.0683	2.0735	2.0788	2.0840	2.0893	2.0945	2.0998	<b>1.01</b>
<b>1.02</b>	2.1050	2.1103	2.1155	2.1208	2.1260	2.1313	2.1365	2.1418	2.1470	2.1523	<b>1.02</b>
<b>1.03</b>	2.1575	2.1628	2.1680	2.1733	2.1785	2.1838	2.1890	2.1943	2.1995	2.2048	<b>1.03</b>
<b>1.04</b>	2.2100	2.2153	2.2205	2.2258	2.2310	2.2363	2.2415	2.2468	2.2520	2.2573	<b>1.04</b>
<b>1.05</b>	2.2625	2.2678	2.2730	2.2783	2.2835	2.2888	2.2940	2.2993	2.3045	2.3098	<b>1.05</b>
<b>1.06</b>	2.3150	2.3203	2.3255	2.3308	2.3360	2.3413	2.3465	2.3518	2.3570	2.3623	<b>1.06</b>
<b>1.07</b>	2.3675	2.3728	2.3780	2.3833	2.3885	2.3938	2.3990	2.4043	2.4095	2.4148	<b>1.07</b>
<b>1.08</b>	2.4200	2.4253	2.4305	2.4358	2.4410	2.4463	2.4515	2.4568	2.4620	2.4673	<b>1.08</b>
<b>1.09</b>	2.4725	2.4778	2.4830	2.4883	2.4935	2.4988	2.5040	2.5093	2.5145	2.5198	<b>1.09</b>
<b>1.10</b>	2.5250	2.5303	2.5355	2.5408	2.5460	2.5513	2.5565	2.5618	2.5670	2.5723	<b>1.10</b>
<b>1.11</b>	2.5775	2.5828	2.5880	2.5933	2.5985	2.6038	2.6090	2.6143	2.6195	2.6248	<b>1.11</b>
<b>1.12</b>	2.6300	2.6353	2.6405	2.6458	2.6510	2.6563	2.6615	2.6668	2.6720	2.6773	<b>1.12</b>

**Expanded Stage Discharge Table For Hydraulic Creek (2008) - New data for 2008 beyond 0.400 m stage**

<b>Meters</b>	<b>0.000</b>	<b>0.001</b>	<b>0.002</b>	<b>0.003</b>	<b>0.004</b>	<b>0.005</b>	<b>0.006</b>	<b>0.007</b>	<b>0.008</b>	<b>0.009</b>	<b>Meters</b>
<b>0.16</b>	0.0000	0.0002	0.0004	0.0006	0.0009	0.0011	0.0013	0.0015	0.0017	0.0019	<b>0.16</b>
<b>0.17</b>	0.0021	0.0023	0.0026	0.0028	0.0030	0.0032	0.0034	0.0036	0.0038	0.0040	<b>0.17</b>
<b>0.18</b>	0.0043	0.0045	0.0047	0.0049	0.0051	0.0053	0.0055	0.0057	0.0060	0.0062	<b>0.18</b>
<b>0.19</b>	0.0064	0.0066	0.0068	0.0070	0.0072	0.0074	0.0077	0.0079	0.0081	0.0083	<b>0.19</b>
<b>0.20</b>	0.0085	0.0087	0.0089	0.0091	0.0094	0.0096	0.0098	0.0100	0.0102	0.0104	<b>0.20</b>
<b>0.21</b>	0.0106	0.0108	0.0111	0.0113	0.0115	0.0117	0.0119	0.0121	0.0123	0.0125	<b>0.21</b>
<b>0.22</b>	0.0128	0.0130	0.0132	0.0134	0.0136	0.0138	0.0140	0.0142	0.0145	0.0147	<b>0.22</b>
<b>0.23</b>	0.0149	0.0151	0.0153	0.0155	0.0157	0.0159	0.0162	0.0164	0.0166	0.0168	<b>0.23</b>
<b>0.24</b>	0.0170	0.0172	0.0174	0.0176	0.0179	0.0181	0.0183	0.0185	0.0187	0.0189	<b>0.24</b>
<b>0.25</b>	0.0191	0.0193	0.0196	0.0198	0.0200	0.0202	0.0204	0.0206	0.0208	0.0210	<b>0.25</b>
<b>0.26</b>	0.0213	0.0215	0.0217	0.0219	0.0221	0.0223	0.0225	0.0227	0.0230	0.0232	<b>0.26</b>
<b>0.27</b>	0.0234	0.0236	0.0238	0.0240	0.0242	0.0244	0.0247	0.0249	0.0251	0.0253	<b>0.27</b>
<b>0.28</b>	0.0255	0.0264	0.0274	0.0283	0.0292	0.0301	0.0311	0.0320	0.0329	0.0338	<b>0.28</b>
<b>0.29</b>	0.0348	0.0357	0.0366	0.0375	0.0385	0.0394	0.0403	0.0412	0.0422	0.0431	<b>0.29</b>
<b>0.30</b>	0.0440	0.0456	0.0471	0.0487	0.0502	0.0518	0.0533	0.0549	0.0564	0.0580	<b>0.30</b>
<b>0.31</b>	0.0595	0.0611	0.0626	0.0642	0.0657	0.0673	0.0688	0.0704	0.0719	0.0735	<b>0.31</b>
<b>0.32</b>	0.0750	0.0768	0.0785	0.0803	0.0820	0.0838	0.0855	0.0873	0.0890	0.0908	<b>0.32</b>
<b>0.33</b>	0.0925	0.0943	0.0960	0.0978	0.0995	0.1013	0.1030	0.1048	0.1065	0.1083	<b>0.33</b>
<b>0.34</b>	0.1100	0.1113	0.1125	0.1138	0.1150	0.1163	0.1175	0.1188	0.1200	0.1213	<b>0.34</b>
<b>0.35</b>	0.1225	0.1238	0.1250	0.1263	0.1275	0.1288	0.1300	0.1313	0.1325	0.1338	<b>0.35</b>
<b>0.36</b>	0.1350	0.1365	0.1380	0.1395	0.1410	0.1425	0.1440	0.1455	0.1470	0.1485	<b>0.36</b>
<b>0.37</b>	0.1500	0.1515	0.1530	0.1545	0.1560	0.1575	0.1590	0.1605	0.1620	0.1635	<b>0.37</b>
<b>0.38</b>	0.1650	0.1698	0.1745	0.1793	0.1840	0.1888	0.1935	0.1983	0.2030	0.2078	<b>0.38</b>
<b>0.39</b>	0.2125	0.2173	0.2220	0.2268	0.2315	0.2363	0.2410	0.2458	0.2505	0.2553	<b>0.39</b>
<b>0.40</b>	0.2600	0.2640	0.2680	0.2720	0.2760	0.2800	0.2840	0.2880	0.2920	0.2960	<b>0.40</b>
<b>0.41</b>	0.3000	0.3040	0.3080	0.3120	0.3160	0.3200	0.3240	0.3280	0.3320	0.3360	<b>0.41</b>
<b>0.42</b>	0.3400	0.3440	0.3480	0.3520	0.3560	0.3600	0.3640	0.3680	0.3720	0.3760	<b>0.42</b>
<b>0.43</b>	0.3800	0.3840	0.3880	0.3920	0.3960	0.4000	0.4040	0.4080	0.4120	0.4160	<b>0.43</b>
<b>0.44</b>	0.4200	0.4240	0.4280	0.4320	0.4360	0.4400	0.4440	0.4480	0.4520	0.4560	<b>0.44</b>
<b>0.45</b>	0.4600	0.4640	0.4680	0.4720	0.4760	0.4800	0.4840	0.4880	0.4920	0.4960	<b>0.45</b>
<b>0.46</b>	0.5000	0.5040	0.5080	0.5120	0.5160	0.5200	0.5240	0.5280	0.5320	0.5360	<b>0.46</b>
<b>0.47</b>	0.5400	0.5440	0.5480	0.5520	0.5560	0.5600	0.5640	0.5680	0.5720	0.5760	<b>0.47</b>

**Expanded Stage Discharge Table For Hydraulic Creek (2008) - New data for 2008 beyond 0.400 m stage**

<b>Meters</b>	<b>0.000</b>	<b>0.001</b>	<b>0.002</b>	<b>0.003</b>	<b>0.004</b>	<b>0.005</b>	<b>0.006</b>	<b>0.007</b>	<b>0.008</b>	<b>0.009</b>	<b>Meters</b>
<b>0.48</b>	0.5800	0.5840	0.5880	0.5920	0.5960	0.6000	0.6040	0.6080	0.6120	0.6160	<b>0.48</b>
<b>0.49</b>	0.6200	0.6240	0.6280	0.6320	0.6360	0.6400	0.6440	0.6480	0.6520	0.6560	<b>0.49</b>
<b>0.50</b>	0.6600	0.6676	0.6751	0.6827	0.6902	0.6978	0.7053	0.7129	0.7204	0.7280	<b>0.50</b>
<b>0.51</b>	0.7355	0.7431	0.7506	0.7582	0.7657	0.7733	0.7808	0.7884	0.7959	0.8035	<b>0.51</b>
<b>0.52</b>	0.8110	0.8185	0.8261	0.8336	0.8412	0.8487	0.8563	0.8638	0.8714	0.8789	<b>0.52</b>
<b>0.53</b>	0.8865	0.8940	0.9016	0.9091	0.9167	0.9242	0.9318	0.9393	0.9469	0.9544	<b>0.53</b>
<b>0.54</b>	0.9620	0.9695	0.9771	0.9846	0.9922	0.9997	1.0073	1.0149	1.0224	1.0300	<b>0.54</b>
<b>0.55</b>	1.0375	1.0451	1.0526	1.0602	1.0677	1.0753	1.0828	1.0904	1.0979	1.1055	<b>0.55</b>
<b>0.56</b>	1.1130	1.1206	1.1281	1.1357	1.1432	1.1508	1.1583	1.1659	1.1734	1.1810	<b>0.56</b>
<b>0.57</b>	1.1885	1.1961	1.2036	1.2112	1.2187	1.2263	1.2338	1.2414	1.2489	1.2565	<b>0.57</b>
<b>0.58</b>	1.2640	1.2716	1.2791	1.2867	1.2942	1.3018	1.3093	1.3169	1.3244	1.3320	<b>0.58</b>
<b>0.59</b>	1.3395	1.3471	1.3546	1.3622	1.3697	1.3773	1.3848	1.3924	1.3999	1.4075	<b>0.59</b>
<b>0.60</b>	1.4150	1.4287	1.4424	1.4561	1.4698	1.4835	1.4972	1.5109	1.5246	1.5383	<b>0.60</b>
<b>0.61</b>	1.5520	1.5657	1.5794	1.5931	1.6068	1.6205	1.6342	1.6479	1.6616	1.6753	<b>0.61</b>
<b>0.62</b>	1.6890	1.7027	1.7164	1.7301	1.7438	1.7575	1.7712	1.7849	1.7986	1.8123	<b>0.62</b>
<b>0.63</b>	1.8260	1.8397	1.8534	1.8671	1.8808	1.8945	1.9082	1.9219	1.9356	1.9493	<b>0.63</b>
<b>0.64</b>	1.9630	1.9767	1.9904	2.0041	2.0178	2.0315	2.0452	2.0589	2.0726	2.0863	<b>0.64</b>
<b>0.65</b>	2.1000	2.1137	2.1274	2.1411	2.1548	2.1685	2.1822	2.1959	2.2096	2.2233	<b>0.65</b>
<b>0.66</b>	2.2370	2.2507	2.2644	2.2781	2.2918	2.3055	2.3192	2.3329	2.3466	2.3603	<b>0.66</b>
<b>0.67</b>	2.3740	2.3877	2.4014	2.4151	2.4288	2.4425	2.4562	2.4699	2.4836	2.4973	<b>0.67</b>
<b>0.68</b>	2.5110	2.5247	2.5384	2.5521	2.5658	2.5795	2.5932	2.6069	2.6206	2.6343	<b>0.68</b>
<b>0.69</b>	2.6480	2.6617	2.6754	2.6891	2.7028	2.7165	2.7302	2.7439	2.7576	2.7713	<b>0.69</b>
<b>0.70</b>	2.7850	2.8047	2.8243	2.8440	2.8636	2.8833	2.9029	2.9226	2.9422	2.9619	<b>0.70</b>
<b>0.71</b>	2.9815	3.0012	3.0208	3.0405	3.0601	3.0798	3.0994	3.1191	3.1387	3.1584	<b>0.71</b>
<b>0.72</b>	3.1780	3.1977	3.2173	3.2370	3.2566	3.2763	3.2959	3.3156	3.3352	3.3549	<b>0.72</b>
<b>0.73</b>	3.3745	3.3942	3.4138	3.4335	3.4531	3.4728	3.4924	3.5121	3.5317	3.5514	<b>0.73</b>
<b>0.74</b>	3.5710	3.5907	3.6103	3.6300	3.6496	3.6693	3.6889	3.7086	3.7282	3.7479	<b>0.74</b>
<b>0.75</b>	3.7675	3.7872	3.8068	3.8265	3.8461	3.8658	3.8854	3.9051	3.9247	3.9444	<b>0.75</b>
<b>0.76</b>	3.9640	3.9837	4.0033	4.0230	4.0426	4.0623	4.0819	4.1016	4.1212	4.1409	<b>0.76</b>
<b>0.77</b>	4.1605	4.1802	4.1998	4.2195	4.2391	4.2588	4.2784	4.2981	4.3177	4.3374	<b>0.77</b>
<b>0.78</b>	4.3570	4.3767	4.3963	4.4160	4.4356	4.4553	4.4749	4.4946	4.5142	4.5339	<b>0.78</b>
<b>0.79</b>	4.5535	4.5732	4.5928	4.6125	4.6321	4.6518	4.6714	4.6911	4.7107	4.7304	<b>0.79</b>
<b>0.80</b>	4.7500	4.7814	4.8128	4.8442	4.8756	4.9070	4.9384	4.9698	5.0012	5.0326	<b>0.80</b>
<b>0.81</b>	5.0640	5.0954	5.1268	5.1582	5.1896	5.2210	5.2524	5.2838	5.3152	5.3466	<b>0.81</b>



**Appendix A - South BC Mountains Environment Canada Climate Data (1948-2008)**

Regional Precipitation Departures From Normal - Ranked Wettest to Driest, 1948 - 2008  
 Regional Temperature Departures From Normal - Ranked Warmest to Coolest, 1948 - 2008

Rank	Winter Precip.		Winter Temp.		Spring Precip.		Spring Temp.		Summer Precip.		Summer Temp.		Fall Precip.		Fall Temp.	
	Yr	Dep. %	Yr	Dep. °C	Yr	Dep. %	Yr	Dep. °C	Yr	Dep. %	Yr	Dep. °C	Yr	Dep. %	Yr	Dep. °C
1	1972	44.1	1992	5	1996	51.9	1992	2.6	1993	71.1	1958	2.4	1959	66.1	1987	2.1
2	1951	30.9	1958	3.6	2002	47.7	2005	2.4	1948	64.7	1998	2.1	1996	61.7	1998	1.6
3	1982	24.7	2003	3.3	1990	38.1	1994	2.3	1983	51.3	1961	2.1	1985	37.1	1953	1.6
4	1950	23.8	1983	3.2	1997	36.9	2004	2.3	1995	45.4	2004	1.8	1998	34	1967	1.5
5	1974	21.9	1987	3.2	1988	36.5	1998	2.2	1976	43.1	2003	1.6	2004	33.7	1963	1.5
6	1956	21.4	2006	3	2003	31	1993	2.2	1964	37.4	2006	1.5	1973	27.6	1988	1.3
7	1965	18.7	1998	3	1959	29.5	1987	1.9	1999	35.7	1967	1.5	1958	26.9	1962	1.3
8	1957	16.7	1981	2.9	1981	26.6	1983	1.7	2005	32.9	1992	1.3	1986	26	1981	1.2
9	1948	14.5	1977	2.9	1984	26.2	1958	1.6	1981	30.4	1994	1.1	2006	25.6	1949	1.2
10	1954	14.2	1967	2.6	1974	23.7	1988	1.6	1954	29	1979	1.1	1990	23.7	1980	1.2
11	1953	13.9	1961	2.6	1960	23.3	1980	1.4	1957	25.8	1970	1	1961	23.3	1952	1.2
12	1959	11.1	1999	2.5	1948	23.3	1981	1.3	1990	25.3	1990	1	1992	22.8	1954	1.2
13	1971	8.2	1953	2.4	1993	19.9	1986	1.3	1963	25.1	2007	0.8	2003	22.3	1989	1.1
14	1966	8	1964	2.3	1961	18.8	1990	1.2	1980	23.3	1989	0.7	1995	20.8	1974	1
15	1952	7.8	2007	2.2	1980	17.8	1969	1.2	2004	19.6	1978	0.7	1984	18.9	1979	0.9
16	1999	7.3	1963	2.2	1955	15.6	1949	1.1	1989	18.8	1971	0.7	1966	16.4	2008	0.9
17	1962	7	1990	2.2	1968	15.5	1957	1.1	1982	18.6	1965	0.6	1955	14.7	1969	0.9
18	1976	6.8	2005	2.1	1978	14.7	1995	1.1	1959	17.9	2002	0.6	1951	14.4	1995	0.9
19	1975	3.2	1994	2	1998	13.8	2007	1.1	1991	17.5	1985	0.6	1964	13.9	1997	0.9
20	1967	1.3	2002	1.7	2000	12.7	2006	1	1972	16.8	1977	0.6	1950	10.7	2001	0.8
21	1994	0.8	2000	1.7	1969	10.9	1961	0.9	1953	16.5	1987	0.6	2005	10.2	1976	0.8
22	1996	0.7	1970	1.6	1986	10.5	1973	0.9	1997	15.3	1991	0.5	1968	9.8	1999	0.7
23	1958	-1.1	1976	1.6	1977	10.2	1963	0.8	1996	12.9	1986	0.5	1963	9.3	1957	0.6
24	1949	-1.9	2004	1.6	1972	10	1985	0.7	1968	9.6	1982	0.4	1988	8.5	1990	0.5
25	1997	-2.2	1995	1.5	1964	9.7	1977	0.7	1975	9.6	1969	0.4	1962	8.4	1994	0.4
26	1968	-2.9	1986	1.2	1991	9.2	2001	0.7	1966	9.5	1950	0.3	1969	7	2005	0.4
27	1961	-4.2	1955	1.1	1966	8.8	2000	0.7	1988	7.2	1948	0.3	1982	4.6	1991	0.3
28	1990	-4.2	1960	1.1	1987	6.6	1978	0.6	1969	6.2	1997	0.3	1994	4.5	2002	0.3
29	1981	-5.1	1988	1	1950	6.2	1968	0.6	1962	5.9	2005	0.2	1997	4	1993	0.3
30	1980	-5.7	1974	0.9	1989	6	1984	0.5	1987	3.7	1996	0.2	1980	2.9	2004	0.3
31	1969	-9.2	1954	0.9	1967	5.9	1979	0.5	2008	3.2	2008	0.2	1977	2.3	1960	0.3
32	1991	-10.5	1968	0.9	1976	5.1	1991	0.4	1986	3.2	1960	0.1	1967	1.4	1966	0.3
33	1963	-17.7	1984	0.8	1994	2.3	1959	0.4	1952	0.5	1951	0.1	1999	1.3	1983	0.2
34	1964	-17.8	1948	0.8	2006	1.8	1989	0.4	2001	0.4	1984	0	1978	1.2	2007	0.1
35	1973	-18.4	2001	0.7	1995	1.4	1953	0.3	1977	-0.7	1956	0	1971	-1.1	2003	0.1
36	1978	-19.5	1980	0.6	1953	1.2	1956	0.2	2000	-0.9	1988	-0.1	1965	-1.2	1975	0
37	1992	-21.4	2008	0.4	2004	-1.4	1952	0.2	1978	-1.5	1981	-0.1	1960	-2.9	1992	0
38	1955	-21.5	1991	0.1	2007	-2	1997	0.2	1992	-1.8	1972	-0.1	1954	-4.5	1968	0
39	1989	-21.8	1959	0	1962	-2.7	1999	0.2	1971	-1.9	2000	-0.1	1975	-5.7	1948	-0.1
40	2007	-24.1	1966	0	1999	-3	2003	0.1	1984	-2.3	1963	-0.1	1989	-5.9	2000	-0.1
41	1983	-24.7	1962	-0.5	1954	-4	1966	0.1	1955	-4.6	1974	-0.1	1991	-5.9	2006	-0.2
42	2005	-25.9	1975	-0.5	1971	-5	1972	0.1	1994	-4.6	2001	-0.1	1949	-6.4	1965	-0.2
43	1988	-26.7	1997	-0.6	1951	-5.5	2008	0.1	1965	-5.1	1983	-0.2	1970	-7.2	1986	-0.3
44	1960	-26.8	1989	-0.7	1957	-9.2	1970	-0.1	2007	-5.9	1995	-0.3	2007	-7.2	1958	-0.3
45	2008	-27.1	1973	-0.7	1983	-10	1960	-0.1	1956	-6.5	1975	-0.3	1983	-8.9	1982	-0.4
46	1995	-30	1971	-0.8	1985	-11.2	1996	-0.2	1950	-12.3	1973	-0.4	1981	-11.1	1956	-0.4
47	2000	-30.4	1951	-0.9	2005	-11.3	1971	-0.3	1949	-15.5	1999	-0.4	1953	-13.1	1951	-0.5
48	1970	-30.7	1996	-1.1	1982	-15	1974	-0.3	1960	-15.7	1952	-0.4	1972	-15.9	1971	-0.6
49	1979	-31	1985	-1.1	1979	-15.3	1976	-0.3	1998	-15.8	1953	-0.5	1948	-16.5	1964	-0.6
50	1986	-31.2	1978	-1.2	1963	-15.6	1962	-0.5	1951	-18.2	1949	-0.6	1974	-16.9	1950	-0.8
51	2006	-31.6	1965	-1.3	2001	-15.6	1948	-0.7	2006	-18.5	1980	-0.7	2000	-20.1	1978	-0.9
52	1985	-31.8	1982	-1.6	1992	-16.2	1965	-0.8	1961	-19.7	1968	-0.7	2008	-20.2	1972	-0.9
53	2002	-32.1	1952	-2	2008	-17	1951	-0.8	1974	-20.5	1955	-0.7	1956	-20.8	1977	-1.1
54	1977	-32.6	1993	-2.4	1970	-18.6	1982	-0.9	1985	-25.4	1962	-0.7	1957	-23	1973	-1.3
55	1984	-35.5	1957	-3.2	1958	-18.8	1964	-0.9	1958	-26.8	1959	-0.7	2002	-26.5	1959	-1.5
56	1998	-36.5	1956	-3.4	1949	-19.5	1950	-0.9	1970	-30.7	1993	-0.7	1993	-27.3	1970	-1.6
57	2003	-36.9	1972	-3.9	1952	-23.2	1975	-1.2	2002	-33.2	1966	-0.8	2001	-28.1	1984	-1.7
58	1993	-38.6	1979	-4	1973	-23.4	1967	-1.3	2003	-35.2	1964	-0.9	1979	-35.1	1996	-1.8
59	2004	-42.8	1949	-4.5	1965	-24.7	2002	-1.8	1979	-35.8	1957	-1.2	1987	-40.8	1961	-1.9
60	1987	-50.4	1969	-4.9	1956	-25.3	1954	-1.9	1973	-37	1976	-1.3	1976	-42.7	1955	-2.4
61	2001	-52.7	1950	-5	1975	-27.5	1955	-2.9	1967	-49.2	1954	-1.6	1952	-58.8	1985	-4.1

**Pooley Creek**  
**Benchmark Survey Notes**  
**09/10/2008 at 15:30 PST**

HI=BS+Elevation  
 Elevation=HI-FS

Station	Backsight	H.I.	Foresight	Elevation	Notes
BM1	0.467	7.679		7.212	
BM2		7.679	0.496	7.183	
H2O surface		7.679	2.768	4.911	
1m Staff Gauge		7.679	2.106	5.573	
Lock Box		7.679	0.496	7.183	Instrument moved
TP Lock Box	0.477	7.660		7.183	
BM1		7.660	0.447	7.213	circuit closed

Circuit Closure Acceptable -0.001

Staff gauge fell over early in 2005 and was re-established.

**BM1** = Lag Bolt on Left Bank Spruce Adjacent to Well (Old WSC Tag #1928)

**BM2** = Top of Lock Guard on Stilling Well Enclosure

**BM3** = Brass Hub on Concrete Diversion Downstream from Well (#19668)

**Canyon Creek**  
**Benchmark Survey Notes**  
**9/10/2008 at 14:30 PST**

HI=BS+Elevation  
 Elevation=HI-FS

Station	Backsight	H.I.	Foresight	Elevation	Notes
BM1	0.799	2.622		1.823	
BM2		2.622	0.355	2.267	
BM3		2.622	1.412	1.210	
H2O Surface		2.622	2.387	0.235	
1 m Staff		2.622	1.615	1.007	bad sight line, redo.
Well Lock		2.622	0.852	1.770	Instrument moved
TP Well Lock	0.821	2.591		1.770	
BM1		2.591	0.768	1.823	
1 m Staff		2.591	1.587	1.004	Rod at angle
BM3		2.591	1.382	1.209	
1 m Staff		2.591	1.590	1.001	Rod Vertical!

Circuit Closure Acceptable 0.000

**BM1** = Lag Screw in Spruce (17 cm DBH) approx. 3m upstream from stilling well and approx. 6m in from Right bank.

**BM2** = Lag Screw in Spruce (45 cm DBH) approx. 1m upstream from stilling well and approx. 2m in from Right bank.

**BM3** = Rebar Pin (painted red) in ground approx. 2m upstream from stilling well and approx. 1.6m in from Right bank.

**Stirling Creek**  
**Benchmark Survey Notes**  
**09/10/2008 at 13:00 PST**

HI=BS+Elevation  
 Elevation=HI-FS

Station	Backsight	H.I.	Foresight	Elevation	Notes
*BM1	1.468	2.912		1.444	Loose pin - damage
*BM2		2.912	1.13	1.782	
BM3		2.912	1.933	0.979	Used as ref. Elev.
H2O Surface		2.912	2.887	0.025	
.9 old staff		2.912	2.096	0.816	Staff damaged
1.000 new staff		2.912	1.995	0.917	New Staff installed
Well x		2.912	0.594	2.318	
TP Well x	0.472	2.790		2.318	
BM1		2.790	1.348	1.442	

Circuit Closure Acceptable 0.002

\*Benchmarks and staff gauge damaged by brushing crew, replaced both B.M.'s in 2006  
 Staff gauge replaced in 2008 during site survey. Old staff still remains but very damaged.

**BM1** = Rebar Pin (painted red) in ground approx. 5.5m upstream from stilling well and near the middle of the Left bank.

**BM2** = Lag Screw in Pine (10 cm DBH) approx. 2.5 m upstream from stilling well and approx. 10m in from Right bank.

**BM3** = Rebar Pin (painted red) in ground approx. 1.5m downstream from stilling well and approx. 8m in from Right bank.

**Hydraulic Creek**  
**Benchmark Survey Notes**  
**9/10/2008 at 14:00 PST**

HI=BS+Elevation  
 Elevation=HI-FS

Station	Backsight	H.I.	Foresight	Elevation	Notes
BM1	0.473	2.931		2.458	
BM2		2.931	1.137	1.794	
TP BM2	1.056	2.850		1.794	
BM3		2.85	0.606	2.244	
Water Surf		2.85	2.61	0.240	
1 m Staff		2.85	1.848	1.002	
Well Lock		2.85	1.023	1.827	
TP Well Lock	0.943	2.770		1.827	
BM1		2.77	0.312	2.458	

Circuit Closure Acceptable 0.000

**BM1** = Lag Screw in Spruce (35 cm DBH) approx. 3.5 m upstream from stilling well and approx. 4m in from right bank.

**BM2** = Rebar Pin (painted red) in ground approx. 0m upstream from stilling well and approx. 6m in from Right bank.

**BM3** = Lag Screw in Spruce (25 cm DBH) approx. 8m downstream from stilling well and approx. 4m in from Right bank.