

Pit No. 1 Hydroelectric Project, FERC No. 2687
Pit 1 Water Quality Monitoring Results 2005
Addressing License Article 401 and SWRCB Certificate Conditions 16 and 17



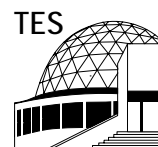
December 29, 2005

Prepared by
Pacific Gas and Electric Company
Technical and Ecological Services
3400 Crow Canyon Road
San Ramon, CA 94583

Prepared for
Pacific Gas and Electric Company
Power Generation

TES Report No. 026.11.05.25

© 2005 by Pacific Gas and Electric Company
All Rights Reserved



Prepared by:

Timothy Sagraves
Consulting Environmental Scientist – ATC Associates

Prepared by:

Elizabeth Frantz
Environmental Technical Specialist

Approved by:

Ed Cheslak
Senior Consulting Environmental Engineer

CONTENTS

Sections	Page
1.0 INTRODUCTION.....	1
1.1 Project Area	1
1.2 FERC Article 401/CSWRCB Water Quality Certificate Conditions.....	1
1.3 Objective	4
2.0 METHODS	4
2.1 Monitoring Program.....	4
2.2 Water Quality	5
2.3 Water Temperature	5
2.4 Stream Flow	5
2.5 Meteorological Stations.....	6
3.0 RESULTS	6
3.1 <i>In situ</i> Water Quality Parameters	6
3.2 Water Temperature	8
3.3 Stream Flow	9
3.4 Meteorology	13
4.0 Discussion	13
4.1 Water Quality	13
4.2 Water Temperature	14
5.0 REFERENCES.....	15

APPENDICES

- Appendix A Water Quality and Temperature Equipment QA/QC Documentation**
- Appendix B *In Situ* Water Quality Data**
- Appendix C Temperature Data**
- Appendix D Stream Flow Data**
- Appendix E Meteorology Data**

CONTENTS, continued

TABLES	Page
2.1-1 Sample locations and the rationale for sampling.....	16
2.1-2 <i>In situ</i> sampling parameters and monitoring rationale	17
3.1-1 Summary of <i>in situ</i> water quality data collected during the 2005 monitoring study	18
3.2-1 Summary of daily average water temperature data – 2005	19
3.3-1 Summary of 2005 stream flow monitoring at temporary and permanent stations.....	21
3.3-2 Summary of 2005 hourly stream stage monitoring at temporary stations.....	22
3.3-3 Summary of 2005 release activity from Pit 1 Forebay complex.....	23
3.4-1 Summary of 2005 meteorological monitoring at Pit 1 and Pit 3 stations.....	25
4.1-1 Comparison of water quality data from 1990-1992, with data from current compliance monitoring program (2004, 2005)	27
4.2-1 Comparison of water temperature data from 1990-1992 with data from current compliance monitoring program (2004, 2005).....	29
FIGURES	Page
2.1-1 Spatial representation of <i>in situ</i> water quality sampling locations	30
3.2-1 Daily average, minimum, and maximum water temperature in Fall River above Pit 1 Diversion (Station FR1)	31
3.2.-2 Daily average, minimum, and maximum water temperature in Fall River at Pit 1 Dam (Station FR2)	32
3.2-3 Daily average, minimum, and maximum water temperature in Fall River at Fall River Pond Weir (Station FR3)	33
3.2-4 Daily average, minimum, and maximum water temperature in Fall River near confluence with Pit River (Station FR4).....	34
3.2-5 Daily average, minimum, and maximum water temperature in Pit River near Pittville (Station PR1)	35
3.2-6 Daily average, minimum, and maximum water temperature in Pit River at Big Eddy (Station PR2)	36
3.2-7 Daily average, minimum, and maximum water temperature in Pit River near Pit Falls (Station PR3)	37
3.2-8 Daily average, minimum, and maximum water temperature in Pit River near Pit 1 Footbridge (Station PR4)	38
3.2-9 Daily average, minimum, and maximum water temperature in Pit River downstream of Pit 1 Powerhouse (Station PR5)	39
3.2-10 Comparison of mean daily water temperature from five Pit River stations with mean daily air temperature from the Pit 1 Forebay station.....	40
3.2-11 Comparison of mean daily water temperature from four Fall River stations with mean daily air temperature from the Pit 1 Forebay station	41
3.3-1 Daily stream flow data from the Pit River near Pittville – 2005	42

CONTENTS, continued

3.3-2	Daily stream flow data from the Pit River near Big Eddy – 2005	43
3.3-3	Daily stream flow data from the Pit River near Pit 1 Footbridge – 2005	44
3.3-4	Daily stream flow data from Pit 1 Powerhouse and the Pit River downstream of Pit 1 Powerhouse	45
4.2-1	Evaluation of flushing flow affects on daily average water temperature in the Pit River bypass reach – July 2005.	46
4.2-2	Evaluation of flushing flow affects on daily average water temperature in the Pit River bypass reach – August 2005.	47

1.0 INTRODUCTION

1.1 Project Area

The Pit 1 Hydroelectric Project, Federal Energy Regulatory Commission (FERC) Project No. 2687, (Project) encompasses approximately 3,500 acres of land and water, almost 3,000 of which form the upper Project, the area above the Project's 15-foot-high, 595-foot-long diversion dam on the Fall River. The upper Project consists of approximately 22 miles of the Fall River, 5 miles of the Tule and Little Tule Rivers, and Horr Pond and Big Lake on the upper reaches of the Tule River.

Below the Fall River diversion dam is the Project's forebay, a 222-acre impoundment formed by the 40-foot-high, 586-foot-long forebay dam. Over 200 acres of Project land surround the forebay. Immediately below the forebay is the 0.7-mile-long Fall River Pond, formed by the 231-foot-long Fall River Weir. The pond provides water to the town of Fall River Mills for its municipal water supply, and (via Knoch's Diversion) to a user with riparian rights superior to Pacific Gas and Electric Company's (PG&E's). Downstream of the Weir is a 0.2-mile-long reach of the Fall River to its confluence with the Pit River. The Project boundary extends for a short way down the Pit River and includes the Pit River Weir.

The Fall River diversion dam is operated to divert water toward the powerhouse, or release water into the Project's forebay for later diversion to the powerhouse for peaking operations. The Project's two intakes converge, and water is carried almost 2.5 miles through a canal and tunnel to the 69.3-MW powerhouse, which is on the Pit River, about 7.6 miles downstream from its confluence with the Fall River. Powerhouse flows are released into the Pit River, bypassing 0.9 miles of the Fall River and 7.6 miles of the Pit River.

1.2 FERC Article 401/CSWRCB Water Quality Certificate Conditions

The Licensee shall prepare a water quality monitoring plan to be submitted to the Chief of the Division of Water Rights for written approval within 6 months of the issuance of the FERC license and shall implement the water quality monitoring plan in the first full summer monitoring season following approval of the monitoring plan. The water quality monitoring program shall be instituted for a term of no less than 5 years. The monitoring shall be used to determine the benefits/effects on water quality of the proposed flow releases outlined in terms 8 and 13. The monitoring shall include but not be limited to water temperature and dissolved oxygen (DO).

Water quality shall be monitored at eight locations:

- *Fall River just downstream of Pit 1 Forebay*
- *Fall River Pond*
- *Lower Fall River just downstream of Fall River Pond*

- *Pit River at McArthur*
- *Pit River just downstream of Big Eddy*
- *Pit River just below Pit River Falls*
- *Pit River at the footbridge upstream of the Pit 1 powerhouse*
- *Pit River downstream of the Pit 1 powerhouse*

Water quality shall be monitored from May 16 to October 31 of each year. Water temperature will be monitored continuously at each of the monitoring locations. The Licensee should use redundant temperature recorders to avoid a loss of temperature data. DO, pH, turbidity, and conductivity will be sampled twice per month. Sampling methods and analyses will be as described in the water quality monitoring plan.

To monitor seasonal and short-term changes in flow, which can affect temperature and water quality, flow shall be measured continuously during the monitoring period with pressure transducers installed at the lower end of Big Eddy and at the footbridge upstream of the Pit 1 powerhouse. The transducers will be calibrated against staff gage readings and periodic flow measurements at each location. These flow measuring sites shall be maintained for the term of the water quality monitoring program and are not intended to meet the rigorous requirements established by the U.S. Geological Survey (USGS) for USGS gages. Compliance with stream flow requirements will be monitored using USGS approved methods at a gage that will be constructed at the Fall River Weir.

The water quality data collected above will be supplemented with meteorological data collected at the Pit 1 Forebay and Pit 3 Intake.

The Licensee shall provide the Chief of the Division of Water Rights the results of the water quality monitoring program by December 31 of each year. At the end of the 5th year of monitoring, the Licensee shall provide the Chief of the Division of Water Rights a report summarizing the 5 years of water quality monitoring. The Licensee shall meet with the Chief of the Division of Water Rights or a designated representative within 60 days of the submittal of the summary report. The purpose of the meeting will be to review the monitoring results and to determine if the beneficial uses identified in the Central Valley Regional Water Quality Control Board (CVRWQCB) Basin Plan (1998) for the Pit River are reasonably protected. Reasonable protection of beneficial uses shall be measured by and limited to factors controllable by and related to the Pit 1 Hydroelectric Project operations in the lower Fall River below the Pit 1 Forebay and the Pit River and from the confluence with the Fall River to the confluence with the Pit 1 tailrace. The Chief of the Division of Water Rights in writing may modify or terminate the water quality monitoring program after review of the 5-year monitoring report prepared by the Licensee.

If, based on the water quality data, the initial streamflow releases are not reasonably protective of the

beneficial uses of the Fall River and Pit River as identified in the Basin Plan, the California Water Board reserves the authority to require the Licensee to make additional flow releases or other actions as required to protect the beneficial uses identified in the Basin Plan.

If the Chief of the Division of Water Rights determines that additional flow releases are necessary to protect water quality within the diverted reach of the Fall and Pit River they shall be adaptively implemented in increments of 50 cubic feet per second (cfs) and limited to the period in which the beneficial uses are affected. The 50 cfs shall be in addition to the initial flow requirements identified in condition 8. Water quality based on the new flow release schedule shall be monitored for three years.

The results of the additional three years of monitoring shall be summarized and submitted to the Chief of the Division of Water Rights by December 31 of the year in which the third year of monitoring is completed. The Licensee can request to meet with the Chief of the Division of Water Rights or designated representative to discuss the monitoring results to determine if the beneficial uses of the Pit River are reasonably protected as described above.

If, at the end of first three year adaptive water quality management period, the Chief of the Division of Water Rights determines in writing that water quality in the Pit River is still not being reasonably protected for any season or part of the season, the Licensee shall release an additional 50 cfs from Fall River Weir in addition to the existing adaptive flow releases. The new flow schedule shall be monitored for three years. If at the end of the second three year adaptive water quality management period, the Chief of the Division of Water Rights determines in writing that water quality in the Pit River is still not being reasonably protected for any season or part of the season, the Licensee shall release an additional 50 cfs from Fall River Pond in addition to the existing adaptive flow releases. This adaptive approach to protecting water quality shall continue until the water quality flow releases have reached the following limits:

The final adaptive water quality instantaneous flow releases shall not exceed a maximum of 200 cfs for the May 16 to May 31 period;

The final adaptive water quality instantaneous flow releases shall not exceed a maximum release of 400 cfs for the June 1 to October 31 period;

The instream flow release for November 1 to November 15 shall not exceed a maximum of 150 cfs; and the November 16 to April 30th period releases shall remain 50 cfs for the life of the new license.

1.3 Objective

The Water Quality and Water Temperature Monitoring Program was initiated to determine the water quality conditions in the Project area under newly licensed operational conditions, and ambient hydrological and meteorological conditions.

2.0 METHODS

2.1 Monitoring Program

2.1.1 Station Locations

Water quality was monitored at nine (9) locations throughout the Project area. Waters associated with the Pit 1 Project include the Fall River and its tributaries, Pit 1 Forebay, Fall River Pond, and the Pit River between the confluence of Fall River and Lake Britton. Sampling was conducted at the following locations as stipulated in FERC Article 401:

- Fall River above the project diversion to the Pit 1 Forebay (FR1)
- Fall River in Pit 1 Forebay at the dam outlet (FR2)
- Fall River Pond at the knocks weir structure (FR3)
- Lower Fall River downstream of the Fall River Pond, near mouth (FR4)
- Pit River at Pittville (PR1)
- Pit River immediately downstream of Big Eddy (PR2)
- Pit River immediately below the Pit River Falls (PR3)
- Pit River at the footbridge upstream of the Pit 1 Powerhouse (PR4)
- Pit River downstream of the Pit 1 Powerhouse (PR5)

Table 2.1-1 lists these sampling locations and the rationale for their selection. The spatial locations of the sampling sites are presented in Figure 2.1-1.

2.1.2 Monitoring Period

Article 401 of the Pit 1 FERC License stipulated that monitoring would be conducted May 16 through October 31 (referenced as the monitoring period in the remainder of the document). In 2005, temperature recorders were installed between May 10th and 11th at all nine locations. The three temporary flow recorders were not installed until June 7th. This was due to the late season storms and resultant high stream flow levels that made it unsafe to enter the streams to install the flow monitoring sensors. Flows in the bypass reach during the period from May 16 through June 6 ranged from 950 to greater than 6,200 cfs. Flows exceeded 1,500 cfs through June 5.

2.2 Water Quality

Water quality was measured *in situ* using a HydroLab™. The analytical parameters of interest (pH, specific conductance [SpC], DO, total dissolved solids [TDS], and turbidity) were measured at each location (along with synoptic water temperature) on a bi-weekly basis (twice per month) during the monitoring period. A list of sampling parameters and their rationale are presented in [Table 2.1-2](#). All instrumentation was maintained and calibrated according to manufacturer's specifications. Calibration and maintenance information is included in [Appendix A](#).

2.3 Water Temperature

Stream temperatures were automatically measured *in situ* using VEMCO MiniLog 12 TR digital thermographs at all nine stations. Redundant temperature recorders were installed at all stations to avoid loss of data due to recorder malfunction or vandalism. The MiniLog 12 TR is a miniature microprocessor controlled temperature logger that stores data in non-volatile memory. The VEMCO data loggers were set to record instantaneous temperature at 20-minute intervals, this data was used to generate hourly average and daily maximum, minimum, and average water temperatures during post processing activities. Data were downloaded to a laboratory computer and stored on a monthly basis. The MiniLog 12 TR has an accuracy of $\pm 0.1^{\circ}\text{C}$ between 5 and 40°C . Each thermograph was calibrated in a water bath before and after deployment. All thermographs deployed showed no sign of drift and consequently required no calibration adjustment. A record of recorder deployment is contained in [Appendix A](#).

2.4 Stream Flow

In addition to water quality and water temperature, stream flow was measured continuously at three locations. In order to monitor seasonal and short-term changes in flow that may affect water temperature and water quality, continuous recording pressure transducers were installed in the Pit River near Pittville (PR1), at the lower end of Big Eddy (PR2), and at the footbridge upstream of the Pit 1 Powerhouse (PR4). Each of the temporary flow monitoring stations consisted of a Campbell CR510 digital recorder, associated Druck 5-psi pressure transducer, and a staff gage (water surface elevation reference pin). The CR510 also records water temperature and a temperature probe was deployed at each flow recording station as a backup for the thermographs. The staff gage, pressure transducers, and temperature probes were placed in-stream, while the digital recorders were located on the stream bank in locked enclosures.

The digital recorders were set to record instantaneous readings every 15 minutes, and store these data as hourly average transducer and temperature values. The stored hourly average data were converted to daily maximum, minimum, and average stage during post processing activities. All data were stored in non-volatile memory. Stored hourly average transducer data were downloaded to computer for offsite

processing. The CR510 temperature data were not used in any analysis since there were no losses of temperature data from the VEMCO thermographs.

During the bi-weekly routine site visits, stream stage was recorded from the staff gage, and the instantaneous transducer reading was also recorded. A simple linear regression was then used to define the relationship between transducer readings and the associated staff gage (stream stage) reading at each station. Average hourly transducer readings were then converted into average hourly stage readings using the resultant equation. The conversion to a stage value based on a fixed reference (stage pin or staff gage) facilitates year to year comparison of flow measurements and allowed for correction of error associated with transducer drift or changes in stream channel morphology.

The primary objective of the routine flow measurements was to cover the range of observed management flows in order to develop a stage-discharge rating equation. Stream flow was determined at least once a month from velocity measurements taken at a discharge transect located near each gaging station. Total stream flow at each transect was determined using U. S. Geological Survey (USGS) approved stream flow measurement techniques (Buchanan, 1980). The majority of velocity measurements were made using a Price AA-type or Gurley-type pygmy velocity meter from a 5-foot top-setting wading rod. At the Big Eddy site (PR2), an Acoustic Doppler Vertical Profiler system (SonTek River-Cat) was used on one occasion to determine total stream discharge. The error associated with these stream flow measurements methods was estimated to range from 8 to greater than 10%.

The relationship of stream stage to stream flow (stage-flow rating) was developed using flow measurements and the associated stage pin readings collected during routine site visits. The resultant stage-flow rating equation was used to convert average hourly stage readings into average hourly flow. The rating is only applicable to flow within the defined range of stage and is also subject to changes in the hydraulic control (high flows, debris accumulation, and in channel vegetation growth). All instrumentation-installed *in situ* is removed during months when seasonal high flows could damage the equipment.

2.5 Meteorological Stations

In order to collect data on ambient weather conditions during the sampling period, two meteorological stations were installed within the Project area. The meteorological stations were located at the Pit 1 Forebay and at the Pit 3 Intake. Each station monitored wind speed, wind direction, air temperature, relative humidity, and incident solar radiation (for a general indication of atmospheric haze/cloud/smoke).

3.0 RESULTS

3.1 *In situ* Water Quality Parameters

A total of nine stations were sampled in the Pit and Fall rivers at bi-weekly intervals for synoptic water

temperature, DO, SpC, pH, TDS, and turbidity during the monitoring period. The results of the monitoring program are summarized in [Table 3.1-1](#). The complete *in situ* data are presented in [Appendix B](#).

DO levels in the Pit River stations ranged from a high of 12.7 mg/L at Station PR1 to a low of 6.2 mg/L at station PR2. These levels had corresponding DO saturation values of 153% and 83%, respectively. The Fall River stations exhibited DO levels ranging from a high of 12.3 mg/L at Station FR2 to a low of 6.8 mg/L at FR4. The resulting DO saturation values were 157% and 89%, respectively.

Specific conductance in the Pit River ranged from a high of 309 μ mhos per centimeter (μ mhos/cm) to a low of 130 μ mhos/cm, each occurring at station PR1. Conductivity values were most variable at PR1, with conditions stabilizing at the downstream stations. Specific conductance in the Fall River ranged from a high of 154 μ mhos/cm at several Fall River stations, to a low of 123 μ mhos/cm at FR4. Conductivity values were very stable spatially and temporally in the Fall River.

In situ pH values in the Pit River ranged from a high of 9.0 at station PR5 to a low of 7.9 at station PR2. Fall River pH values ranged from a high of 9.1 at FR2 to a low of 7.8 at FR1. *In situ* pH values tended to be very stable throughout the Project area both temporally and spatial.

Pit River TDS values ranged from a high of 0.20 g/L at PR1 to a low of 0.09 g/L at PR5. TDS measurements in the Fall River fluctuated very little and were typically measured between 0.10 - 0.08 g/L at all stations during the monitoring period.

As expected, turbidity fluctuated with seasonal changes in runoff conditions in the watershed areas upstream of the Project. Turbidity in the Pit River ranged from a high of 215 NTU at station PR3 to a low of 1.2 NTU at stations PR5. The high turbidity readings occurred during the high runoff in May-June following late season storms. Fall River turbidities were considerably lower, with a measured high of 16.4 and a low of 0.2 NTU.

Average *in situ* pH values for the entire sampling period are shown in Table 3.1-1. Average values for pH were higher than the basin plan objective of 8.5 at three Fall River stations (FR2, FR3, and FR4). However, ambient water pH values were also high (see Station FR1 and PR1) and the downstream station averages had increases that were less than 0.5 pH units over the ambient conditions. The relatively alkaline levels can be attributed to naturally high ambient conditions, the higher pH of groundwater inflow, and to the effects of algal growth and decomposition, particularly during the summer months when biological production is at its peak (PG&E, 1993 and DWR, 1982). The pH values measured during the 2005 monitoring period are also consistent with the available historical data recorded during a 1990-92 monitoring program where it was determined that high pH levels were naturally occurring and did not reach a level that produced a negative affect on any of the beneficial uses

(PG&E, 1993).

Average *in situ* DO values and oxygen saturation levels for the entire sampling period were within basin plan objectives. However, minimum DO levels fell below the basin plan objective for COLD freshwater habitat of 7 mg/L at three stations in the Pit River (PR2, PR3, and PR4). At no time did DO fall below the WARM freshwater objective of 5.0 mg/L. The Pit River in the project affected reaches is designated as both WARM and COLD freshwater habitat in the Basin Plan.

All other *In situ* values were within the basin plan objectives.

3.2 Water Temperature

Water temperature was measured at nine locations in the Pit and Fall Rivers. The average, minimum and maximum daily average water temperatures measured during the monitoring period are presented in [Table 3.2-1](#). Water temperature reported as daily average, minimum, and maximum for all stations are compared in [Figures 3.2-1—3.2-9](#). Hourly average water temperatures are summarized in [Appendix C](#).

The data from the redundant temperature recorders were compared from each station using a T-test analysis. The small difference between the individual recorders was statistically non-significant and well within the manufacture's stated level of instrument accuracy. Consequently, one complete data set was chosen from each station and was used for the data analysis presented in this report.

In general, water temperatures were highest in the Pit River upstream of the canyon reach (PR1 and PR2). Water temperatures decreased in the Pit River bypass reach downstream of Big Eddy due to the inflow of groundwater accretion (approximately 100 cfs). Mean daily water temperatures at PR1 for the period July 1 through August 31 ranged from 19.4 to 25.5°C (average 22.8°C). This station defines conditions in the Pit River upstream of the Project area. Mean daily water temperatures at PR2 for the same period ranged from 19.5 to 24.7°C (average 22.9°C). This site is the first station downstream of the confluence with the Fall River. In contrast, mean daily water temperatures at PR4, at the end of the bypass reach ranged from 18.5 to 23.0°C (average 20.9°C). The Pit River downstream of Pit 1 Powerhouse had mean daily water temperatures ranging from 17.8 to 22.8°C (average 20.2°C) for the July-August period. [Figure 3.2-10](#) compares mean daily water temperatures from each of the five Pit River stations with mean daily air temperature at Pit 1 Forebay.

Water temperatures in the Fall River were lowest at station FR1 above the Pit 1 diversion and then remained fairly consistent from station FR2 at the Pit 1 Forebay to the confluence with the Pit River. Mean daily water temperatures at FR1 for the period July 1 through August 31 ranged from 17.4 to 21.8°C (average 19.9°C). This station defines conditions in the Fall River as it enters the Project area.

Mean daily water temperatures at FR2 for the same period ranged from 19.3 to 24.2°C (average 22.5°C). This site is the first station downstream of Pit 1 Forebay. Mean daily water temperatures at FR4, at the end of the reach ranged from 19.2 to 24.3°C (average 22.6°C). As indicated by this data, temperatures in the Fall River from the forebay dam to the mouth were consistently similar. [Figure 3.2-11](#) compares mean daily water temperatures from each of the four Fall River stations with mean daily air temperature from Pit 1 Forebay.

3.3 Stream Flow

Stream flow was monitored at three temporary gage stations located on the Pit River during the 2005 monitoring program. Two routine monitoring stations also reported flow in the Project vicinity. These include the continuous monitoring of flow from the Pit 1 Powerhouse and synoptic readings of releases from Pit 1 Forebay and the Fall River Pond (Pit 1 Forebay Complex). These stations are operated by PG&E as part of its normal operating logistics. A final permanent station is located on the Pit River downstream of the inflow from the Pit 1 Powerhouse. This station is operated in cooperation with the USGS and represents the total combined flow from both the Pit and Fall Rivers.

Data from all stations are presented as a summary of daily average flows in [Table 3.3-1](#). Only data for the period May 16 through October 31 are discussed in detail. All available data will be presented in [Appendices D1 and D2](#).

3.3.1 Pit River

Pit River at Pittville

The most upstream station was located in the Pit River near Pittville. This location is the site of an abandoned permanent gaging station and is upstream of any influence from the Pit River Weir/McArthur Pool. This station is located 7.5 miles upstream of the confluence of the Fall River with the Pit River. The Pittville station represents conditions in the Pit River that ultimately enter the project area. The station is immediately upstream of the tail of the Pit River Weir pool, at the flows observed during the monitoring period it was not affected by changes in elevation within the pool. However, a number of additional inflows and outflows occur in the pool between Pittville and Fall River Mills. These flows are associated with wide ranging agricultural activities; the volume associated with these changes is not monitored.

Flows in the Pit River at Pittville were continuously monitored from June 7 through November 2, 2005. A total of three discharge measurements were made at this location covering a range of flow from 2.65 to 77.7 cfs. These measurements represent a range in stage of 2.63 to 3.75 feet, which effectively defines the known range of flows at this location. These measurements were used to revise the existing stage-discharge rating (RT1-PR1-04) for this station. Stream stage at this location ranged from 2.51 to 5.07 ft over the course of monitoring ([Table 3.3-2](#)). Flows over a stage of 3.79 ft were considered beyond the

rating limit and were given a value of 90 cfs. All measurement and rating data for this station are contained in [Appendix D1](#).

Based on the constraints of the Pittville stage-discharge rating (RT1-PR1-04), mean daily flows at this station ranged from 1.78 to over 90 cfs ([Table 3.3-1](#)). [Figure 3.3-1A](#) compares daily maximum and minimum flows for the period May 16 through October 31, 2005. [Figure 3.3-1B](#) compares mean daily flow with mean daily stage; this illustrates the difference between the rated flow and the absolute range in flow as measured by stage at this location. Hourly average stream flow data are summarized in [Appendix D2](#).

Pit River at Big Eddy

The second station was located at the end of Big Eddy pool where the river transitions into the higher gradient canyon reach. This station is located approximately 2.25 miles downstream of the confluence with the Fall River. Flows in the Pit River at Big Eddy were continuously monitored from June 7 through November 2, 2005. The Big Eddy station represents conditions in the Pit River at the head-end of the Big Eddy pool, prior to the river entering the high gradient canyon section.

A total of two discharge measurements were made at this location covering a range of flow from 126 to 234 cfs. These measurements represent a range in stage of 1.44 to 1.70 feet. These measurements were used to confirm an existing rating for this station developed in 1992. This rating covers a range in flow of 24.0 to 487 cfs. The two measurements made in 2005 plotted 5% and -10% respectively to this rating. Because the only measurement section available at this station is less than ideal at flows over 100 cfs these measurements were deemed adequate to confirm the use of the old rating. Stream stage at this location ranged from 1.45 to 2.87 ft over the course of monitoring ([Table 3.3-2](#)). Flows over a stage of 2.36 ft were considered beyond the rating limit and were given a value of 530 cfs. All measurement and rating data for this station are contained in [Appendix D1](#).

Based on the constraints of the Big Eddy stage-discharge rating (RT1-PR2-04), mean daily flows at this station ranged from 143 to over 530 cfs ([Table 3.3-1](#)). [Figure 3.3-2A](#) compares daily maximum and minimum flows for the period May 16 through October 31, 2004. [Figure 3.3-2B](#) compares mean daily flow with mean daily stage; this effectively illustrates the difference between the rated flow and the absolute range in flow measured at this location. Hourly average stream flow data are summarized in [Appendix D2](#).

Pit River at Pit 1 Footbridge

The final temporary station was located at the footbridge near the Pit 1 Powerhouse. This station represents conditions in the bypass reach before receiving inflow from Pit 1 Powerhouse. This station is approximately 5.75 miles downstream of the confluence with the Fall River. Flows in the Pit River at the Pit 1 footbridge were continuously monitored from June 7 through November 2. The Footbridge station

represents conditions in the Pit River at the end of the canyon section and before receiving inflow from the Pit 1 Powerhouse. A total of three discharge measurements were made at this location covering a range in flow of 305 to 363 cfs. These measurements represented a range in stage of 2.34 to 2.47 feet. These measurements were used to confirm an existing rating developed for this station in 1992. This rating covers a range in flow from 135 to 729 cfs. The correlation of the four measurements made in 2005 to this rating was between 4 and 11%. These measurements were deemed adequate to confirm the use of the old rating. The absolute range in stream stage at this location ranged from 1.78 to 4.06 ft over the course of monitoring (Table 3.3-2). Flows over a stage of 3.53 ft were considered beyond the rating limit and were given a value of 800 cfs. All measurement and rating data for this station are contained in Appendix D1.

Based on the constraints of the Pit 1 Footbridge stage discharge rating (RT1-PR4-04), mean daily flows at this station ranged from 236 to over 800 cfs (Table 3.3-1). Figure 3.3-3A compares daily maximum and minimum flows for the period May 16 through October 31, 2004. Figure 3.3-3B compares mean daily flow with mean daily stage; this effectively illustrates the difference between the rated flow and the absolute range in flow measured at this location. Hourly average stream flow data is summarized in Appendix D2.

Accretion flow occurring between the Big Eddy and Footbridge stations were estimated over the course of the non-runoff period. The source of these accretion flows is predominately springs that occur throughout the reach. Accretion was estimated for periods when flows were relatively stable, as a result artificial high flow events and reduced flow events were eliminated. In addition, flows were estimated after Muck Valley operation ended and were therefore not influencing flows (August 1 through September 30). Based on the 2005 monitoring, daily average accretion flow in the bypass reach averaged 87 cfs and ranged from 69 to 149 cfs.

Pit 1 Powerhouse

Mean daily flows from the PG&E Pit 1 Powerhouse (PG&E Gage No. 55) ranged from 79 to 1,470 cfs (Table 3.3-1). Figure 3.3-4A presents mean daily flows for the period May 16 through October 31, 2005. The flow values from the powerhouse are considered less accurate than either the USGS or temporary gages. The powerhouse values are based on calculations that convert actual generation (as megawatts) to flow; the conversion formula has not been verified recently via independent flow meters. The level of inaccuracy is compounded by the ever changing load schedule associated with powerhouse operation and the difference in efficiency between single and tandem unit operation (per communication with Dan Kogut, PG&E Hydrographer; Burney California).

Pit River Downstream of Pit 1 Powerhouse

Mean daily flows at the USGS gage station in the Pit River downstream of the Pit 1 Powerhouse (USGS

11355010) ranged from 975 to 7,500 cfs (Table 3.3-1). Figure 3.3-4B presents mean daily flows for the period May 16 through October 31, 2005. Flow data from this station are compiled based on USGS protocol and are processed using well established quality control methods.

3.3.2 Fall River

Fall River and Pit 1 Diversion Complex

Releases into the lower Fall River are made from PG&E's Pit 1 Forebay. Flow travels through the Fall River Pond and is released to the Fall River, a secondary diversion is also made at this location to the Knoch's Ranch via the Knoch Diversion structure.

Currently there is no facility that measures the flow in the Fall River below the Fall River Weir. The flow regime present during the monitoring period was estimated based on synoptic readings from PG&E's Pit 1 Forebay (PG&E gage No. 57) and Knoch's Diversion (PG&E gage No. 40). These readings were converted to flow based on existing stage flow relationships. The record from these release values has not been reviewed by the USGS (as traditional for compliance gages) due to the fact that this is an interim release solution until the capital improvements are made. FERC reviews these data with that in mind.

Releases are determined using a discharge formula based on the size of the radial gate in use and the pressure (head) over the opening. This is an empirically founded method, but the gates are difficult to set precisely as they were not designed to be operated to the nearest 0.01 ft. Releases are therefore set to deliver the minimum flow based on a minimum possible forebay operating level (minimum head) as well as accounting for potential demand at the Knoch's diversion. These synoptic readings are presented in Table 3.3-3.

During the 2005 monitoring period a total of four high flow events were initiated from Pit 1 Forebay. The first event occurred June 3rd through June 5th. Peak flow during this event was 1,459 cfs. The second event occurred July 15th through July 17th. During this time flows from the Forebay were increased to approximately 1,225 cfs. A third high flow event occurred August 26th through August 28th; flows from the Forebay were increased to approximately 1,019 cfs. All of these events were associated with the required flushing flows through Fall River Pond. A ramping rate of approximately 300 cfs per 8-hour period is used during these release adjustments. A final high flow event occurred September 18 through September 22nd; flows from the Forebay were increased to approximately 1,073 cfs. This event was associated with Pit 1 Powerhouse tripping offline, necessitating the release of flows through the forebay.

A reduction in release flow was made on three separate dates (September 13th, 26th, and October 5th-6th). These flow reductions were made to facilitate aquatic survey efforts conducted by PG&E as part of the compliance monitoring. Flows were reduced to 76-77 cfs during these reductions.

All of these events were captured by the temporary flow monitoring stations (PR2 and PR4) located downstream of the Fall River confluence (Figure 3.3-2 and 3.3-3).

3.4 Meteorology

As discussed in Section 2.5, meteorology was monitored at two locations within the regional area. The Pit 1 Forebay station represented conditions in the Project area. The Pit 3 Intake station represents regional conditions and is a site with a long history of data collection activities.

Data from both stations are summarized in Table 3.4-1. Daily average data from each station are included in Appendix E.

4.0 DISCUSSION

4.1 Water Quality

Data collected by the Licensee during the 1990-1992 relicensing program were compared with data from the 2004-2005 compliance monitoring programs. Only select water quality parameters were compared, DO, DO percent saturation, pH, and SpC. Only data for the period May through October were used in this comparison. The results of the comparison are presented in Table 4.1-1.

In general, the data presented in Table 4.1-1 indicates that the range in water quality levels have remained relatively constant among monitoring years. The exceptions are dissolved oxygen and pH levels measured in the Pit River at Big Eddy. Low DO values in 1992 were the result of the static low flow regime existing in the watershed prior to the start of operations at Muck Valley Powerhouse. In particular, this regime was driven by the absence of a release to the lower Fall River, combined with low summer flows in the Pit River above the Fall River confluence composed almost entirely of agricultural returns.

The Muck Valley Project located near the town of Bieber, diverts and returns Pit River water upstream of the Pittville station (PR1). The Muck Valley Project went into full operation in 1993 following completion of PG&E's relicensing studies. As a result of this Project, the existing conditions in the Pit River documented during PG&E's relicensing studies were significantly altered. The operating cycle used by the Muck Valley facility creates a regime of diurnally and temporally fluctuating flow in the Pit River above the Fall River confluence. The diurnal cycle created by the facility is the result of a reduced-period-operating regime, with operations occurring from 1200 to 1800 hours daily. The temporal operating cycle used by the powerhouse is based on a 5-day operating period, with the facility operating Monday through Friday and shutting down Saturday through Sunday. The influence of these operational fluctuations on flow in the Pit River are illustrated in Figures 3.3-1, 2, and 3. Muck Valley operations are contingent on water availability. During high runoff years, operations can continue longer into the summer. As indicated in these figures, Muck Valley operations continued through July in 2005.

The change in water quality observed at the Big Eddy station appears to be related to changes in the flow regime of the Pit River that have occurred since the initial relicensing studies. These changes are most apparent when comparing DO and pH levels seen 1992 with those measured in 2004-2005. Generally, DO minimum values are increased and pH maximum values are reduced or stabilized. The available data are not sufficient, however, to determine whether the change in water quality is related to PG&E instream flow releases made to the Fall River, Much Valley operations, or a combination of the two.

4.2 Water Temperature

Daily average water temperature data collected by the Licensee during the 1990-1992 relicensing program were compared with data from the 2004-2005 compliance monitoring programs. In order to focus the analysis on periods of extreme meteorological influence, only data from July and August were used for this comparison. The results of this comparison are presented in [Table 4.2-1](#).

The data presented in [Table 4.2-1](#) indicate that mean monthly water temperatures in the Fall River have remained comparatively stable. Mean July and August temperatures from 1990-92 are very similar to those measured in 2004-2005 from each of the three stations. This indicates that the increased instream flow release made from Pit 1 Forebay to the lower Fall River has not significantly altered the thermal structure of the Forebay. The distance between the Forebay and the Pit River confluence is sufficiently short that there is little thermal change occurring in the Fall River Pond, as a result, temperatures in the lower Fall River reflect conditions in the Forebay.

The 2004-2005 water temperature data from Pit River stations suggest that the thermal regime in the bypass reach has changed when compared with 1990-92 data ([Table 4.2-1](#)). The data indicates that mean July and August temperatures at Big Eddy (PR2) have remained relatively unaffected by the change in flow regime. Differences at this station are similar to those in the Fall River stations. However, the two stations located downstream of Big Eddy (PR3 and PR4) both exhibit 2004-2005 temperatures that are warmer than temperatures observed in 1990-92. This increase in temperature is assumed to be the result of increased summer period flows through the bypass reach. The increased flows are the result of the instream flow release in the Fall River and operational fluctuations at Muck Valley Powerhouse. These increased flows have reduced the influence of cool spring accretion flows originating in this portion of the system. The Fall River release provides a constant 150 cfs, while the Muck Valley operations pulse higher flows through the system on a daily basis. As discussed previously, Muck Valley operations end as available water stores are depleted. As a result impacts on the summer flow regime from Muck Valley operations end in June or July.

The average difference in mean daily temperature between PR4 and PR2 in 2005 was -2.1°C for the July-August period (negative value indicates that PR4 was cooler than PR2). In 2004 this difference

averaged -2.4°C for the same period. For 1991 and 1992, the comparable average difference was -3.8 and -3.6°C, respectively.

To further evaluate the effects of increased flow on the thermal regime in the bypass reach, hourly average data from PR2 and PR4 were compared during two of the flushing flow events. Data surrounding the July 16th and August 27th flushing flow events were used for this evaluation.

For the July 16th event, data for the period July 13th through July 20th was used to determine changes to the thermal regime associated with flushing flows. **Figure 4.2-1** presents the results of this evaluation. For the three days prior to the start of the flushing flow event, daily average temperatures at PR4 were 1.8 to 1.9°C cooler than PR2. During the two days of the event PR 4 was 0.5 to 0.6°C cooler than PR2. After the event, mean daily averages at PR4 were 2.3 to 2.5°C cooler than PR2. The influence of Muck Valley is also evident in the flow trace in this figure (see especially PR2). As illustrated, the Muck Valley releases are transient and while they do affect temperature to some level, they do not last long enough to overwhelm the cooling influence of the springs.

For the August 27th event, data for the period August 24th through August 30th was used to determine changes to the thermal regime. **Figure 4.2-2** presents the results of this evaluation. For the three days prior to the start of the flushing flow event, daily average temperatures at PR4 were 1.5 to 1.7°C cooler than PR2. During the two days of the event PR 4 was 0.2 to 0.4°C cooler than PR2. After the event, mean daily averages at PR4 were 1.1 to 1.4°C cooler than PR2. Muck Valley operations were not a factor during this period.

5.0 REFERENCES

- Buchanan, T.J., and W.P. Somers. 1980. Discharge Measurements at Gaging Stations. Tech. Water Resources Investigations. Book 3, Chapter A8.
- California State Department of Water Resources (DWR). 1982. Pit River Water Quality Study. Northern District.
- California Regional Water Quality Control Board, Central Valley Region (CVRWQCB). July 1982. Fall River Water Quality Monitoring Survey.
- CVRWQCB 1998. The Water Quality Control Plan (Basin Plan). The Sacramento River Basin and the San Joaquin River Basin. Fourth Edition.
- Pacific Gas and Electric Company. 1993. Water Resources Investigation for the Pit 1 Hydroelectric Relicensing Project (FERC Project No. 2687).

Table 2.1-1
Sample locations and the rationale for sampling

	Station Location	Monitoring Activity	Rationale
FR1	Fall River above the project diversion to Pit 1 Forebay	TR, WQ	Representative of background conditions in Fall River above Project.
FR2	Fall River at Pit 1 Forebay Dam (in Forebay)	TR, WQ	Characterize water quality in Fall River below Project, current operations.
FR3	Fall River Pond at Weir	TR, WQ	Characterize water quality in Fall River Pond under current operations.
FR4	Lower Fall River near confluence with Pit River	TR, WQ	Characterize water quality conditions in Lower Fall River before the confluence with the Pit River under current operations.
PR1	Pit River at Pittville	TR, WQ, F	Characterize water quality conditions in the Pit River upstream of the Project, before the confluence with the Fall River
PR2	Pit River downstream of Big Eddy	TR, WQ, F	Characterize water quality in the Pit River upstream of the canyon reach and the inflow of natural spring accretion flows
PR3	Pit River downstream of Pit River Falls	TR, WQ	Characterize water quality in the canyon section of the Pit River
PR4	Pit River at the footbridge upstream of the Pit 1 Powerhouse	TR, WQ, F	Characterize water quality in the downstream end of the canyon, below the inflow of natural spring accretion flows
PR5	Pit River downstream of the Pit 1 Powerhouse	TR, WQ	Characterize water quality downstream of Pit 1 Powerhouse and the return of full volume of Fall River flows to Pit River
MET	Pit 1 Forebay	Met	Characterize ambient conditions within the project area
MET	Pit 3 Intake	Met	Characterize ambient conditions within the regional area

TR=Temperature Recorder, WQ=*In Situ* Water Quality Measurement
F=Flow Monitoring, Met=Meteorological Station

Table 2.1-2
***In situ* sampling parameters and monitoring rationale**

Parameter	Units	Detection Limits	Analysis Location	Rationale
Synoptic temperature	°C	0.1	<i>In-situ</i> instrumentation	Indicator of basic water chemistry and water quality
Continuous temperature	°C	0.1	Digital thermograph	Indicator of basic water chemistry and water quality
Dissolved oxygen	mg/L	0.1	<i>In-situ</i> instrumentation	Indicator of basic water chemistry and water quality
pH	units	0.1	<i>In-situ</i> instrumentation	Indicator of basic water chemistry and water quality
Specific conductance	umhos/cm	1	<i>In-situ</i> instrumentation	Indicator of basic water chemistry and water quality
TDS	g/L	0.01	<i>In-situ</i> instrumentation	Indicator of basic water chemistry and water quality
Turbidity	NTU	0.2	<i>In-situ</i> instrumentation	Indicator of basic water chemistry and water quality
Air Temperature	°C	0.1	Meteorological Station	Indicator of ambient conditions
Wind Speed	MPH	1	Meteorological Station	Indicator of ambient conditions
Wind Direction	degrees	1	Meteorological Station	Indicator of ambient conditions
Solar Radiation	W/m2		Meteorological Station	Indicator of ambient conditions
Time	hh:mm:ss	1s	Meteorological Station	Time
Julian Date	days		Meteorological Station	Date
Relative Humidity	%	1	Meteorological Station	Indicator of ambient conditions

Table 3.1-1

Summary of *in situ* water quality data collected during the 2005 monitoring study.

Average	PR1	PR2	PR3	PR4	PR5		FR1	FR2	FR3	FR4
Dissolved Oxygen (mg/L)	9.2	8.0	8.9	8.6	8.8		9.1	9.7	8.8	8.2
Oxygen Saturation (%)	110	95	103	100	100		104	116	104	97
Specific Conductance (µmhos/cm)	232	181	177	176	154		148	148	148	146
pH (Standard Units)	8.3	8.1	8.3	8.4	8.3		8.3	8.7	8.6	8.6
Total Dissolved Solids (g/L)	0.15	0.12	0.11	0.11	0.10		0.09	0.09	0.09	0.09
Turbidity (NTU)	38.2	33.6	34.6	31.3	14.6		3.2	4.0	3.1	5.2
Minimum	PR1	PR2	PR3	PR4	PR5		FR1	FR2	FR3	FR4
Dissolved Oxygen (mg/L)	7.0	6.2	6.6	6.9	7.8		8.2	8.0	6.9	6.8
Oxygen Saturation (%)	90	83	87	89	91		83	93	82	89
Specific Conductance (µmhos/cm)	130	142	135	146	138		131	130	130	123
pH (Standard Units)	8.1	7.9	8.0	8.1	8.0		7.8	8.4	8.2	8.3
Total Dissolved Solids (g/L)	0.08	0.09	0.09	0.09	0.09		0.08	0.08	0.08	0.08
Turbidity (NTU)	3.2	7.6	3.7	2.8	1.2		0.4	0.2	0.2	1.0
Maximum	PR1	PR2	PR3	PR4	PR5		FR1	FR2	FR3	FR4
Dissolved Oxygen (mg/L)	12.7	9.3	11.0	9.9	10.1		10.0	12.3	11.1	9.9
Oxygen Saturation (%)	153	99	119	108	110		121	157	134	102
Specific Conductance (µmhos/cm)	309	248	232	225	164		154	153	154	154
pH (Standard Units)	8.8	8.7	8.5	8.6	9.0		8.7	9.1	8.9	9.0
Total Dissolved Solids (g/L)	0.20	0.16	0.15	0.14	0.10		0.10	0.10	0.10	0.10
Turbidity (NTU)	192.2	184.3	215.9	209.1	94.1		16.4	8.6	14.3	16.4

Table 3.2-1
Summary of Daily Average Water Temperature - 2005

Fall River Stations

Monthly Statistics Based on Daily Average Data								
Station	Month	Water Temperature (°C)			Diel Range (°C)			Data Days
		Maximum	Minimum	Average	Maximum	Minimum	Average	
FR1	May	18.8	11.9	15.7	1.7	0.8	1.3	16
	June	20.0	14.1	17.0	1.9	0.7	1.4	30
	July	21.8	19.8	20.6	1.6	0.8	1.2	31
	August	20.5	17.4	19.2	1.2	0.7	1.0	31
	September	17.4	12.7	15.4	1.2	0.5	0.8	30
	October	14.3	11.1	12.4	0.9	0.4	0.6	31
FR2	May	20.0	13.5	16.8	4.2	1.0	2.4	16
	June	21.6	16.3	18.6	4.1	0.4	2.3	30
	July	24.2	22.4	23.3	4.0	1.5	2.7	31
	August	23.1	19.3	21.7	4.3	1.3	2.8	31
	September	19.6	14.8	17.4	2.9	0.6	1.9	30
	October	15.3	11.8	13.5	2.1	0.4	1.2	31
FR3	May	19.5	13.6	16.7	3.1	0.7	1.9	16
	June	22.1	16.6	18.8	3.0	0.9	1.8	30
	July	24.4	22.5	23.4	2.6	1.1	2.1	31
	August	23.2	19.2	21.9	2.5	1.2	1.9	31
	September	19.6	14.6	17.4	1.9	0.9	1.4	30
	October	15.4	11.8	13.5	1.6	0.6	1.0	31
FR4	May	19.5	13.6	16.7	3.2	0.8	2.0	16
	June	22.0	16.5	18.7	2.9	0.8	1.9	30
	July	24.3	22.5	23.4	2.6	1.1	2.1	31
	August	23.1	19.2	21.8	2.6	1.3	1.9	31
	September	19.5	14.6	17.4	2.4	1.0	1.6	30
	October	15.4	11.8	13.4	2.1	0.6	1.1	31

Table 3.2-1 (Continued)

Pit River Stations

		Monthly Statistics Based on Daily Average Data						
		Water Temperature (°C)			Diel Range (°C)			Data
Station	Month	Maximum	Minimum	Average	Maximum	Minimum	Average	Days
PR1	May	17.4	12.8	14.6	2.3	1.0	1.6	7
	June	22.5	15.9	19.2	6.0	0.7	3.3	23
	July	25.5	21.1	23.9	8.4	3.7	5.9	31
	August	23.1	19.4	21.8	8.7	6.6	7.6	31
	September	20.1	14.1	17.2	8.0	3.3	6.3	30
	October	15.0	11.8	13.5	5.4	0.6	3.5	31
PR2	May	17.3	12.9	14.7	2.7	0.6	1.6	7
	June	22.1	16.8	19.0	2.5	0.4	1.2	23
	July	24.7	22.4	23.7	2.9	0.6	1.4	31
	August	23.6	19.5	22.0	2.2	0.7	1.2	31
	September	19.7	15.0	17.4	2.0	0.5	1.1	30
	October	15.1	11.7	13.2	1.5	0.3	0.8	31
PR3	May	21.5	13.0	17.6	2.7	0.7	1.5	16
	June	21.3	17.0	18.8	3.2	0.8	1.9	30
	July	23.3	21.4	22.3	3.1	1.1	2.3	31
	August	21.8	19.0	20.9	2.8	1.0	2.3	31
	September	19.1	15.4	17.3	2.5	0.7	2.0	30
	October	15.5	12.7	14.0	2.2	0.5	1.4	31
PR4	May	21.3	13.1	17.6	2.7	0.8	1.6	16
	June	20.8	16.9	18.5	3.1	0.8	2.1	30
	July	23.0	20.5	21.5	3.4	1.4	2.5	31
	August	21.0	18.5	20.2	3.1	1.3	2.6	31
	September	18.5	15.1	16.9	2.8	0.9	2.2	30
	October	15.3	12.7	13.9	2.3	0.5	1.5	31
PR5	May	19.7	12.8	16.6	2.6	0.7	1.5	16
	June	20.2	15.1	17.6	2.2	0.7	1.5	30
	July	22.8	20.1	20.9	2.2	0.8	1.4	31
	August	20.6	17.8	19.5	2.5	1.1	1.3	31
	September	17.7	13.3	15.8	3.1	0.7	1.2	30
	October	14.6	11.5	12.8	1.1	0.4	0.7	31

Table 3.3-1

Summary of 2005 stream flow monitoring at temporary and permanent stations.

Station	Year	Month	Daily Average Flow ¹			Days Rating Exceeded ²	Data Days
			max	min	mean		
Pit River at Pitville (PR1)	2005	May	----	----	----	---	----
	2005	June	>90.0 ³	39.7	>81.1 ³	18.3	23
	2005	July	>66.7 ³	16.4	>46.1 ³	4.5	25
	2005	Aug	14.4	1.87	5.31	0.0	31
	2005	Sept	7.69	1.78	4.94	0.0	30
	2005	October	>88.6 ³	6.92	>34.4 ³	1.9	31
Pit River at Big Eddy (PR2)	2005	May	----	----	----	---	----
	2005	June	>530 ³	209	>393 ³	7.2	23
	2005	July	>530 ³	156	>239 ³	1.8	31
	2005	Aug	>530 ³	170	>232 ³	1.9	31
	2005	Sept	>322 ³	147.5	>228 ³	0.3	30
	2005	October	>328 ³	169	>260 ³	0.1	31
Pit River at Footbridge (PR4)	2005	May	----	----	----	---	----
	2005	June	>800 ³	272	>556 ³	4.1	23
	2005	July	>800 ³	290	>388 ³	1.8	31
	2005	Aug	>761 ³	281	>332 ³	1.5	31
	2005	Sept	>467 ³	234	>313 ³	0.1	30
	2005	October	>394 ³	252	>332 ³	0.0	31
Pit 1 Powerhouse ⁴	2005	May	1,470	1,096	1,220	---	23
	2005	June	1,209	79	992	---	30
	2005	July	955	79	840	---	31
	2005	Aug	914	168	784	---	31
	2005	Sept	1,001	578	858	---	30
	2005	October	997	847	938	---	31
Pit River below Pit 1 Powerhouse (USGS Gage) ⁵	2005	May	7,500	2,300	4,776	---	23
	2005	June	2,420	1,270	1,720	---	30
	2005	July	1,340	1,070	1,217	---	31
	2005	Aug	1,410	975	1,139	---	31
	2005	Sept	1,290	992	1,181	---	30
	2005	October	1,370	1,170	1,274	---	31

1. Daily values are based on hourly average data, month statistics represent the maximum, minimum, and mean based on these daily average flows.

2. Total number of days when the hourly average stage exceeded the existing stage discharge relationship.

3. Flows probably exceeded this value, due to stream stage exceeding the stage-discharge rating.

4. Data supplied obtained from PG&E MapView Hydro Database.

5. Data obtained from USGS Internet Web Site.

Table 3.3-2

Summary of 2005 hourly stream stage monitoring at temporary stations.

Station	Year	Month	Hourly Average Stage ¹			Data Days
			max	min	mean	
Pit River at Pitville (PR1)	2005	May	---	---	---	---
	2005	June	4.92	3.43	4.15	23
	2005	July	4.42	3.03	3.58	25
	2005	Aug	3.23	2.52	2.74	31
	2005	Sept	2.93	2.51	2.75	30
	2005	October	5.07	2.86	3.39	31
Pit River at Big Eddy (PR2)	2005	May	---	---	---	---
	2005	June	2.78	1.56	2.15	23
	2005	July	2.78	1.47	1.74	31
	2005	Aug	2.87	1.52	1.73	31
	2005	Sept	2.74	1.45	1.71	30
	2005	October	2.51	1.53	1.80	31
Pit River at Footbridge (PR4)	2005	May	---	---	---	---
	2005	June	3.91	1.96	2.96	23
	2005	July	4.06	2.00	2.49	31
	2005	Aug	4.00	2.03	2.29	31
	2005	Sept	3.58	1.78	2.23	30
	2005	October	3.03	1.91	2.30	31

1. Hourly values are based on hourly average data, month statistics represent the maximum, minimum, and mean based on these hourly average flows.

Table 3.3-3
Summary of Release Activity from Pit 1 Forebay Complex

Pit 1 Forebay (PH57)¹

Date - Time	Discharge (cfs)	Remarks
5/3/05 4:03 PM	89	----
5/13/05 5:13 PM	88	----
5/15/05 5:13 PM	89	----
5/16/05 4:30 PM	178	Started spilling Pit 1 Forebay.
5/16/05 4:59 PM	310	----
5/16/05 5:26 PM	444	----
5/16/05 5:39 PM	531	----
5/17/05 12:53 AM	667	Adjusted spill to level the Forebay.
5/17/05 1:23 AM	710	Adjusted #5 gate.
5/17/05 1:52 AM	753	Adjusted #5 gate a little more.
5/18/05 8:49 PM	811	----
5/19/05 7:41 PM	435	Pit 1 PH Unit1 back on line, both 1&2 available.
5/20/05 12:03 PM	687	----
5/20/05 6:07 PM	822	----
5/21/05 12:56 PM	822	Increased spill for pit 3.
5/22/05 8:58 PM	725	----
5/24/05 7:05 PM	680	----
5/25/05 10:25 AM	565	----
5/25/05 1:00 PM	327	----
5/25/05 9:11 PM	95	----
5/30/05 5:20 PM	1459	Began mandated seasonal flush.
6/1/05 9:51 AM	177	----
6/4/05 3:53 PM	1298	Adjusted #5 from 1.9 to 1.45.
6/5/05 1:57 PM	1388	----
6/5/05 3:45 PM	170	End mandated flushing program.
6/7/05 2:30 PM	193	Opened Gate #4 from 0.4 to 0.45.
6/10/05 6:45 PM	193	----
6/15/05 4:44 PM	199	----
6/29/05 2:17 PM	194	----
6/30/05 2:48 PM	195	----
7/1/05 5:00 PM	191	----
7/7/05 3:44 PM	198	----
7/15/05 4:00 PM	649	Began mandated seasonal flush.
7/15/05 5:54 PM	653	----
7/15/05 6:10 PM	865	----
7/15/05 7:05 PM	865	----
7/16/05 12:40 AM	1009	----
7/16/05 7:12 AM	1017	----
7/16/05 7:13 AM	1140	Opened #1 gate to 2.2/per Pit 3 Switching Center.
7/16/05 9:24 AM	1225	Adjusted gate 4 to 2.4 to level the Forebay.
7/17/05 11:14 AM	995	----
7/17/05 4:05 PM	196	End mandated flushing program.
7/26/05 3:53 PM	191	----

1. Data supplied by PG&E's Hydro Generation Department

Table 3.3-3 (Continued)

Pit 1 Forebay (PH57)¹

8/2/05 10:01 AM	199	----
8/12/05 1:27 PM	190	----
8/17/05 10:15 AM	196	----
8/24/05 4:57 PM	200	----
8/26/05	---	Begin mandated flushing program
8/27/05 12:48 AM	1019	----
8/27/05 4:00 AM	942	----
8/28/05	---	End mandated flushing program
9/13/05 7:21 PM	76	Lowered flows due to scheduled aquatic habitat tests.
9/16/05 1:59 PM	191	Resumes normal in stream flow for this date.
9/19/05 3:50 PM	194	Started ramping up spill for Pit 1 & 2 units relay.
9/19/05 4:25 PM	1073	PH57 at 194 cfs, spill at 1073 for Pit 1 & 2 unit relay.
9/19/05 10:27 PM	1061	Started ramping down spill.
9/19/05 11:30 PM	191	Completed ramping down spill.
9/23/05 3:08 PM	196	----
9/26/05 6:04 AM	77	Lowered for crawfish study.
9/29/05 5:25 PM	199	----
10/4/05 3:21 PM	191	----
10/5/05 6:02 AM	77	Lowered for crawfish study.
10/6/05 9:15 PM	79	Flows reduced for crawfish study.
10/6/05 9:20 PM	175	Restored flows to normal schedule.
10/25/05 10:12 AM	179	----
10/28/05 4:20 PM	174	----

1. Data supplied by PG&E's Hydro Generation Department (D. Kogut, Hydrographer - Burney)

Table 3.4-1

Summary of Meteorological Monitoring at Pit 1 Forebay and Pit 3 Intake

Pit 1 Forebay Diversion Station

Station	Units	Year	Month	Daily Average ¹			Data Days
				Max	Min	Mean	
Air Temperature	(°C)	2005	May	20.6	6.6	14.1	16
			June	21.6	7.3	14.4	30
			July	25.6	18.9	22.3	31
			Aug	22.5	16.1	20.0	31
			Sept	18.5	7.4	14.0	30
			Oct	14.4	4.7	9.7	31
Relative Humidity	(%)	2005	May	91	42	62	16
			June	86	46	60	30
			July	62	35	47	31
			Aug	52	35	43	31
			Sept	76	39	52	30
			Oct	51	27	40	31
Solar Radiation ²	(watts/m ²)	2005	May	516	114	386	16
			June	501	126	384	30
			July	473	240	408	31
			Aug	452	356	417	31
			Sept	429	90	356	30
			Oct	347	55	277	31
Wind Speed	(mph)	2005	May	3.32	1.40	2.27	16
			June	3.08	1.28	2.07	30
			July	3.16	1.09	1.96	31
			Aug	2.67	1.10	1.86	31
			Sept	2.47	0.96	1.64	30
			Oct	3.21	0.70	1.41	31

¹ = Based on hourly average data.

² = Solar data is processed to eliminate night time zero readings.

Table 3.4-1 (Continued)

Pit 3 Intake Station

Station	Units	Year	Month	Daily Average ¹			Data Days
				Max	Min	Mean	
Air Temperature	(°C)	2005	May	21.1	7.2	14.2	16
			June	21.3	7.3	14.8	30
			July	25.3	19.7	22.1	31
			Aug	22.4	17.6	20.2	31
			Sept	18.1	9.5	14.2	30
			Oct	14.5	5.1	9.9	31
Relative Humidity	(%)	2005	May	91	46	67	16
			June	89	50	61	30
			July	61	42	51	31
			Aug	52	33	43	31
			Sept	75	41	53	30
			Oct	41	17	28	31
Solar Radiation ²	(watts/m ²)	2005	May	514	107	399	16
			June	530	128	445	30
			July	522	247	494	31
			Aug	483	418	448	31
			Sept	429	143	363	30
			Oct	340	79	228	31
Wind Speed	(mph)	2005	May	1.32	0.33	0.70	16
			June	1.20	0.37	0.71	30
			July	0.88	0.47	0.66	31
			Aug	1.14	0.56	0.77	31
			Sept	1.05	0.46	0.67	30
			Oct	0.80	0.24	0.53	31

¹ = Based on hourly average data.

² = Solar data is processed to eliminate night time zero readings.

Table 4.1-1

**Comparison of water quality data from 1990-1992 with
data from current compliance monitoring program (2004-2005).**

Station		Dissolved Oxygen (mg/L)				
		1990	1991	1992	2004	2005
FR1	Maximum	12.5	11.6	9.4	10.6	10.0
(P-03)	Minimum	7.2	9.5	6.8	8.4	8.2
FR2	Maximum	13.7	9.0	9.8	11.4	12.3
(P-04)	Minimum	6.8	8.3	6.8	7.5	8.0
FR3	Maximum	10.3	11.6	8.2	9.8	11.1
(P-06)	Minimum	7.0	7.6	5.6	6.1	6.9
FR4	Maximum	---	---	---	9.9	9.9
(---)	Minimum	---	---	---	7.1	6.8
PR1	Maximum	---	---	---	12.3	12.7
(---)	Minimum	---	---	---	5.6	7.0
PR2	Maximum	---	---	18.5	9.4	9.3
(BE)	Minimum	---	---	3.7	7.1	6.2
PR3	Maximum	8.8	10.4	9.1	9.5	11.0
(P-08)	Minimum	5.4	8.0	6.6	7.3	6.6
PR4	Maximum	9.2	10.2	9.8	9.7	9.9
(P-09)	Minimum	5.6	6.3	6.4	7.4	6.9
PR5	Maximum	9.0	10.3	11.4	10.2	10.1
(P-10)	Minimum	5.0	6.7	6.1	7.5	7.8

Station		DO Saturation (%)				
		1990	1991	1992	2004	2005
FR1	Maximum	153	127	118	130	121
(P-03)	Minimum	84	109	80	81	83
FR2	Maximum	196	124	129	152	157
(P-04)	Minimum	77	101	101	90	93
FR3	Maximum	129	139	104	129	134
(P-06)	Minimum	81	62	69	71	82
FR4	Maximum	---	---	---	97	102
(---)	Minimum	---	---	---	80	89
PR1	Maximum	---	---	---	171	153
(---)	Minimum	---	---	---	61	90
PR2	Maximum	---	---	246	115	99
(BE)	Minimum	---	---	46	92	83
PR3	Maximum	100	119	108	103	119
(P-08)	Minimum	63	98	78	91	87
PR4	Maximum	104	113	113	100	108
(P-09)	Minimum	64	77	73	87	89
PR5	Maximum	101	110	137	112	110
(P-10)	Minimum	57	82	69	82	91

Table 4.1-1 (Continued)

Station		pH (Standard Units)				
		1990	1991	1992	2004	2005
FR1 (P-03)	Maximum	9.0	9.2	8.9	9.0	8.7
	Minimum	8.7	8.6	8.8	8.0	7.8
FR2 (P-04)	Maximum	9.6	9.1	9.3	9.5	9.1
	Minimum	8.6	8.8	9.1	8.6	8.4
FR3 (P-06)	Maximum	9.3	9.6	9.2	9.3	8.9
	Minimum	8.6	8.8	8.5	8.2	8.2
FR4 (----	Maximum	---	---	---	9.2	9.0
	Minimum	---	---	---	7.9	8.3
PR1 (----	Maximum	---	---	---	9.2	8.8
	Minimum	---	---	---	7.8	8.1
PR2 (BE)	Maximum	---	---	10.0	8.7	8.7
	Minimum	---	---	7.2	8.0	7.9
PR3 (P-08)	Maximum	8.5	8.5	8.5	8.6	8.5
	Minimum	8.2	8.4	7.6	7.8	8.0
PR4 (P-09)	Maximum	8.8	8.6	9.1	8.7	8.6
	Minimum	8.4	8.3	8.0	7.9	8.1
PR5 (P-10)	Maximum	8.8	9.1	9.1	8.9	9.0
	Minimum	8.5	8.8	8.6	8.1	8.0

Station		Specific Conductance (umhosS/cm)				
		1990	1991	1992	2004	2005
FR1 (P-03)	Maximum	158	180	163	161	154
	Minimum	151	152	133	148	131
FR2 (P-04)	Maximum	165	178	163	159	153
	Minimum	149	145	145	145	130
FR3 (P-06)	Maximum	160	168	167	160	154
	Minimum	150	149	150	146	130
FR4 (----	Maximum	---	---	---	160	154
	Minimum	---	---	---	151	123
PR1 (----	Maximum	---	---	---	329	309
	Minimum	---	---	---	206	130
PR2 (BE)	Maximum	---	---	280	249	248
	Minimum	---	---	224	165	142
PR3 (P-08)	Maximum	237	240	224	216	232
	Minimum	209	196	164	170	135
PR4 (P-09)	Maximum	208	213	220	233	225
	Minimum	184	191	134	163	146
PR5 (P-10)	Maximum	170	208	169	174	164
	Minimum	159	154	126	150	138

Table 4.2-1

Comparison of water temperature data from 1990-1992 with
data from the current monitoring program (2004-2005).

Station		Daily Average Water Temperature (°C)									
		July					August				
		1990	1991	1992	2004	2005	1990	1991	1992	2004	2005
FR1 (P-03)	Maximum	21.9	21.8	21.8	22.0	21.8	20.9	20.7	21.0	20.4	20.5
	Mean	20.3	20.3	19.8	20.3	20.6	18.5	18.9	19.6	18.9	19.2
FR2 (P-04s)	Maximum	25.0	24.3	23.6	27.2	24.2	24.2	24.0	22.4	26.2	23.1
	Mean	23.4	23.1	21.8	23.5	23.3	21.1	22.1	21.1	21.9	21.7
FR3 (P-06)	Maximum	25.7	24.1	23.7	25.4	24.4	23.0	23.9	23.8	23.5	23.2
	Mean	22.6	23.6	21.8	22.8	23.4	21.0	22.6	22.6	21.3	21.9
FR4 (----)	Maximum	----	----	----	25.3	24.3	----	----	----	23.5	23.1
	Mean	----	----	----	22.7	23.4	----	----	----	21.2	21.8
PR1 (----)	Maximum	----	----	----	28.2	25.5	----	----	----	25.7	23.1
	Mean	----	----	----	22.8	23.9	----	----	----	21.0	21.8
PR2 (BE)	Maximum	----	24.6	23.6	25.1	24.7	----	23.7	24.0	23.6	23.6
	Mean	----	23.4	21.8	23.0	23.7	----	21.9	23.6	21.7	22.0
PR3 (P-08)	Maximum	21.3	21.9	21.6	24.0	23.3	20.7	21.3	20.1	23.1	21.8
	Mean	20.3	21.0	19.8	21.7	22.3	19.4	19.2	20.2	20.5	20.9
PR4 (P-09)	Maximum	19.8	20.4	21.9	23.0	23.0	19.2	20.1	19.2	22.2	21.0
	Mean	18.8	19.4	19.0	20.8	21.5	17.9	18.0	18.7	19.7	20.2
PR5 (P-10)	Maximum	21.8	21.6	21.6	22.6	22.8	20.8	21.0	20.8	20.7	20.6
	Mean	20.3	20.6	19.8	20.5	20.9	18.7	19.5	20.0	19.1	19.5

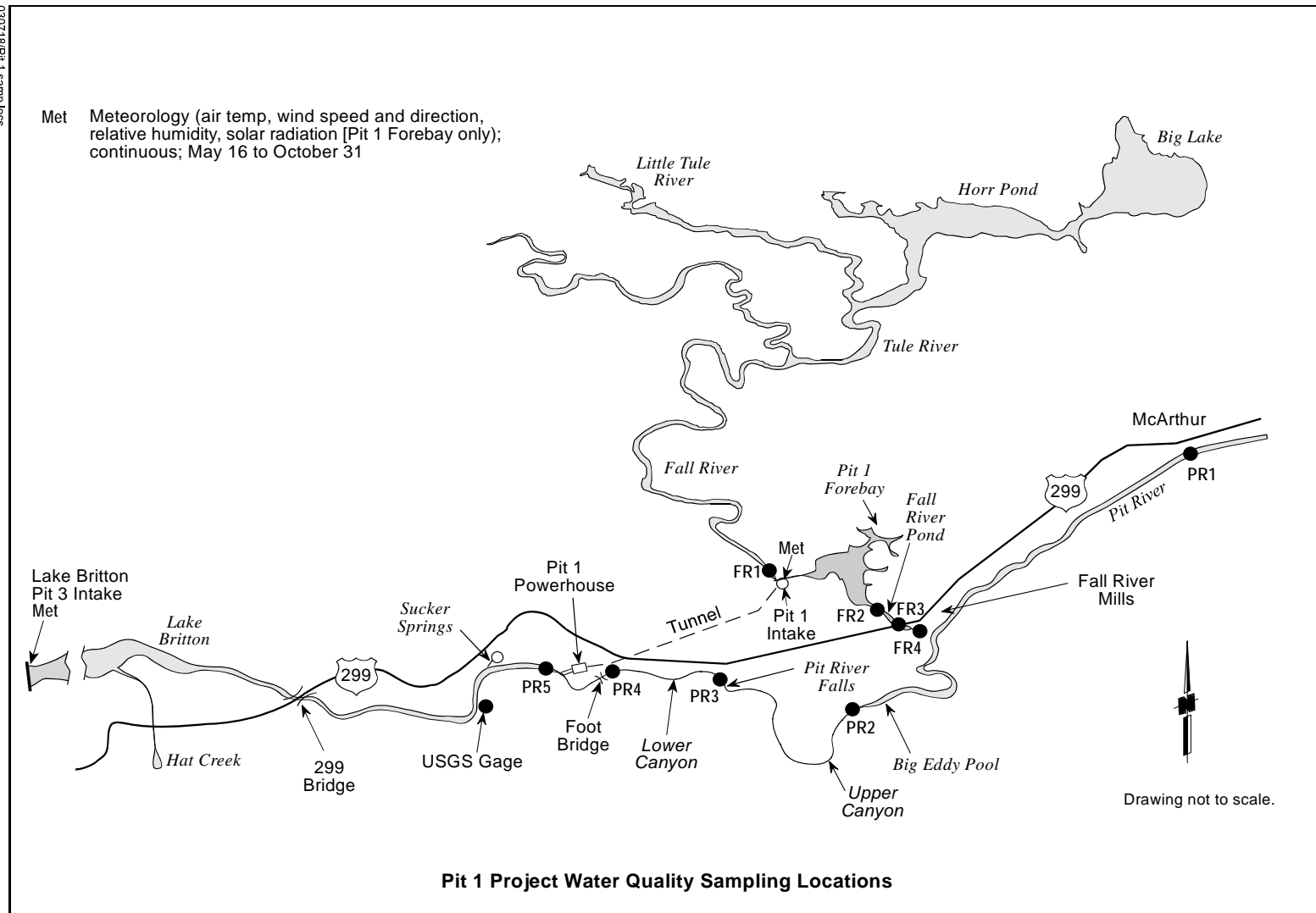


Figure 2.1-1. Spatial representation of *in situ* water quality sampling locations.

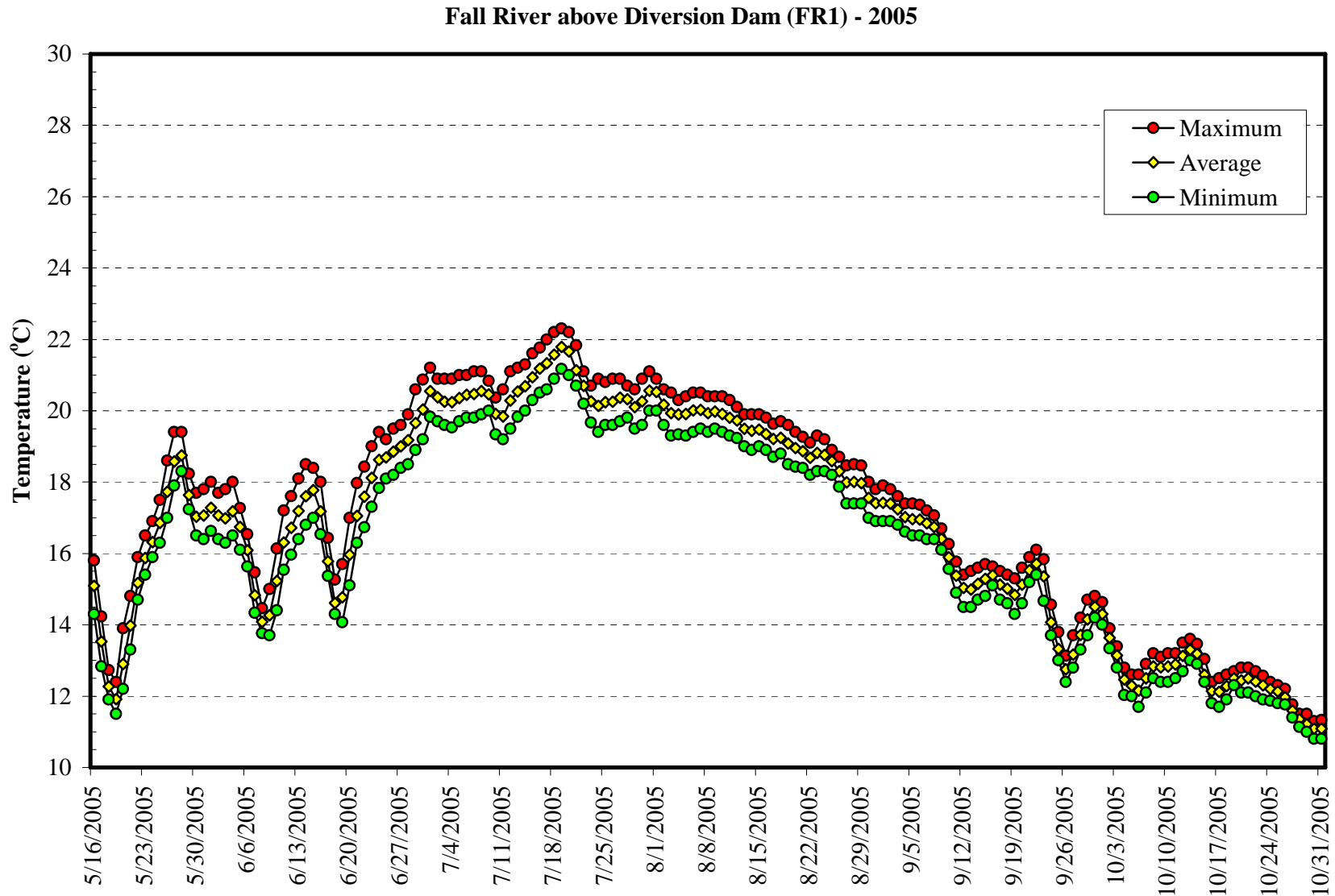


Figure 3.2-1. Daily average, minimum and maximum water temperature in Fall River above Pit 1 Diversion (Station FR1).

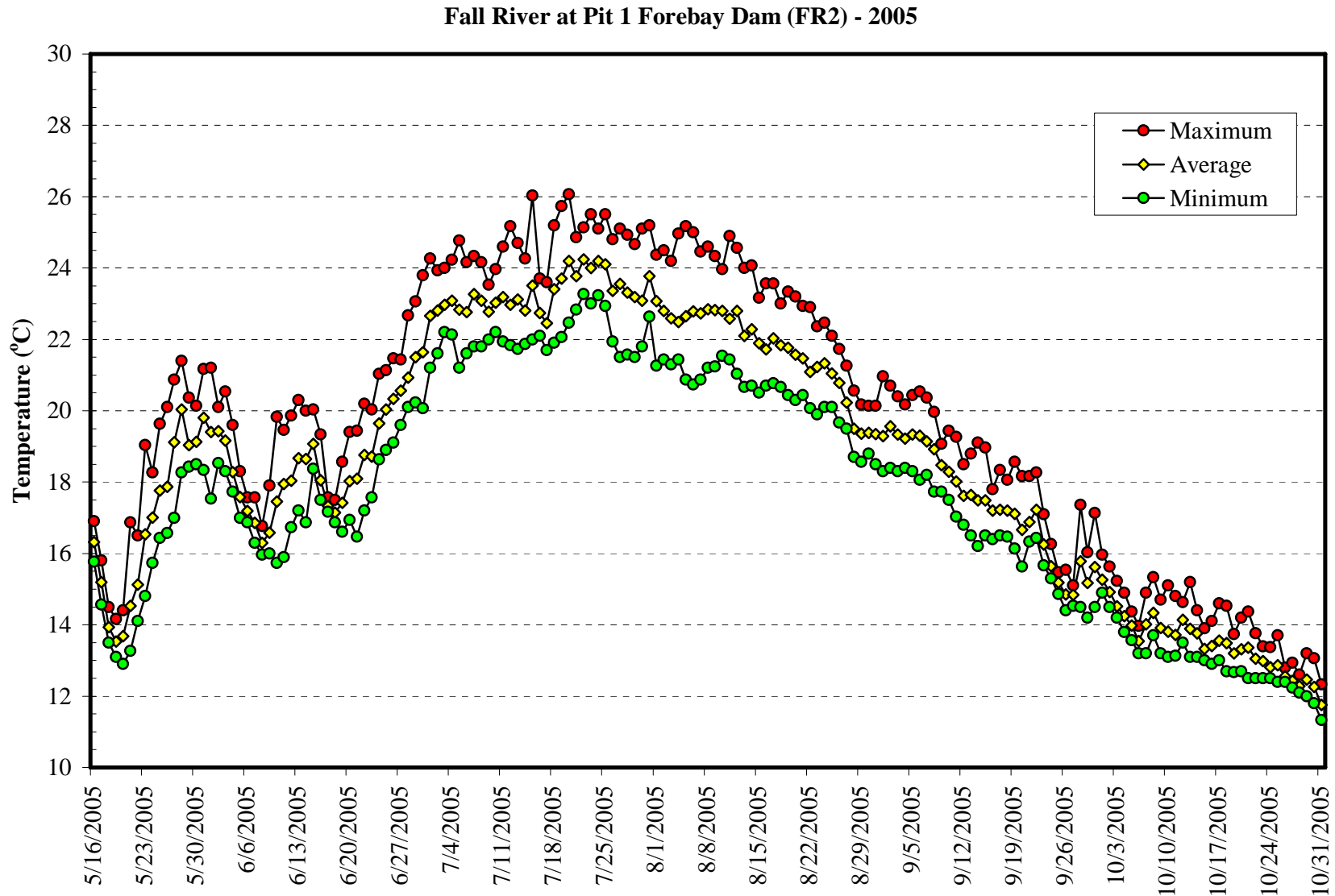


Figure 3.2-2. Daily average, minimum and maximum water temperature in Fall River at Pit 1 Forebay Dam (Station FR2).

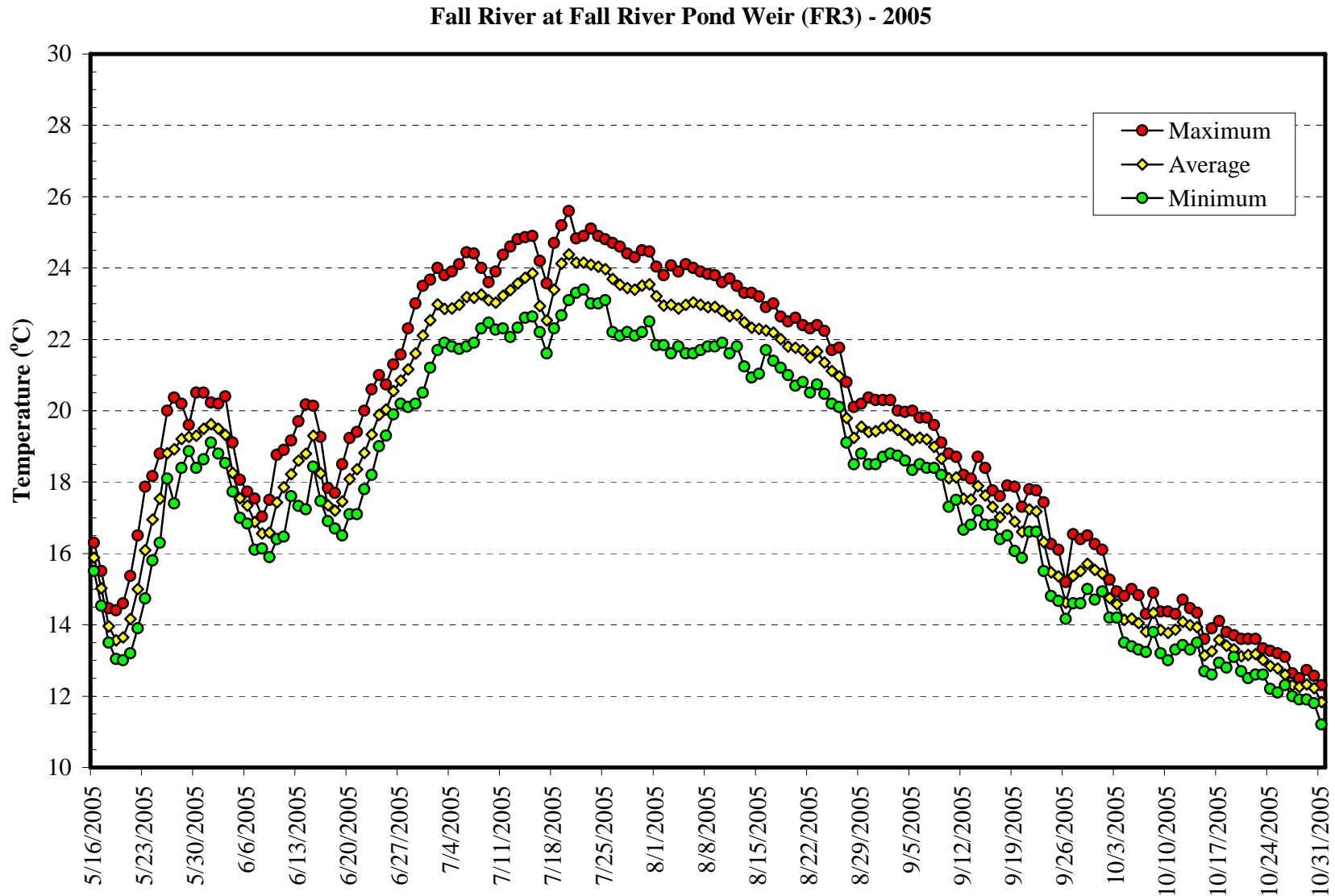


Figure 3.2-3. Daily average, minimum and maximum water temperature in Fall River at Fall River Pond (Station FR3).

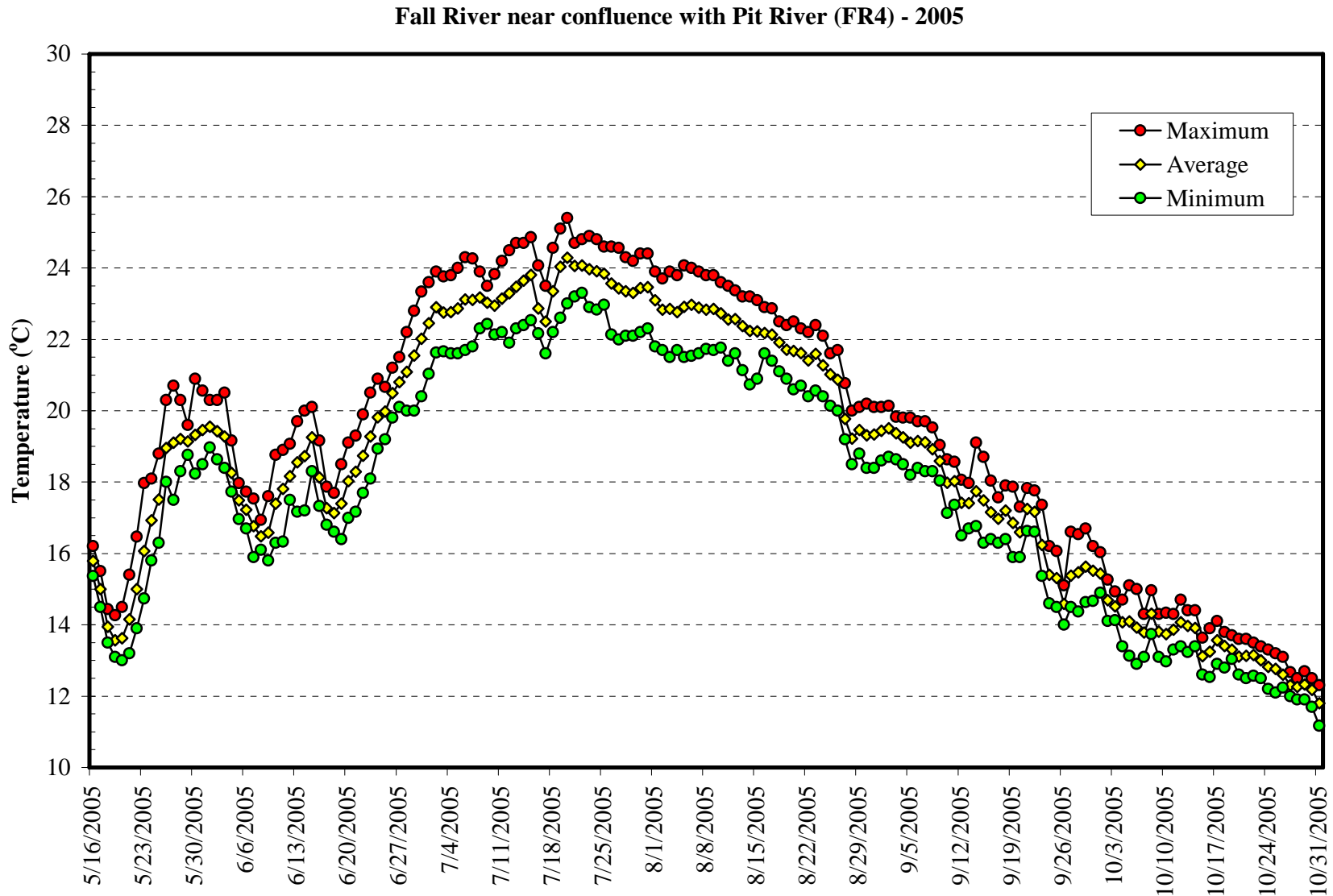


Figure 3.2-4. Daily average, minimum and maximum water temperature in Fall River near confluence with Pit River (Station FR4).

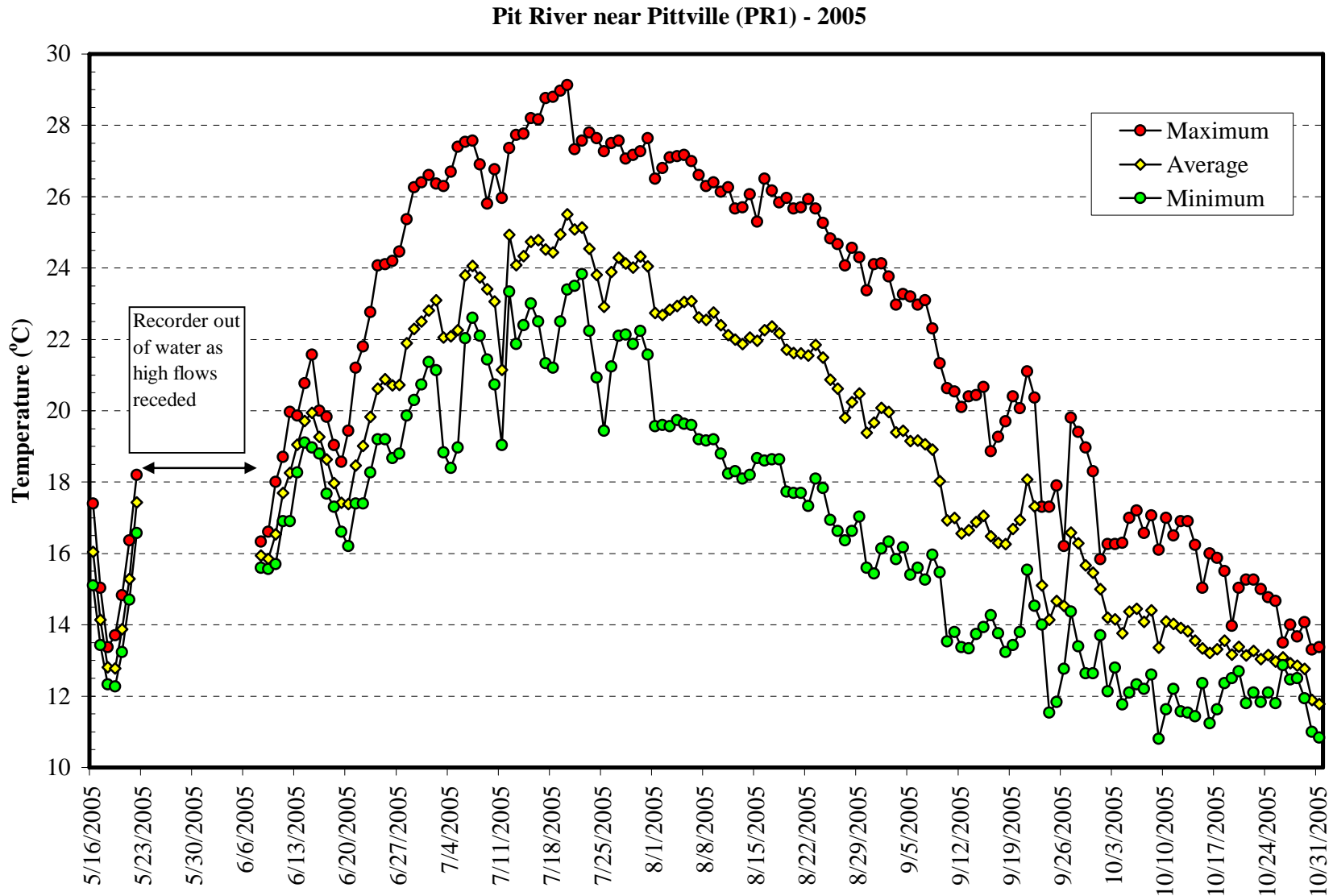


Figure 3.2-5. Daily average, minimum and maximum water temperature in Pit River at Pittville (Station PR1).

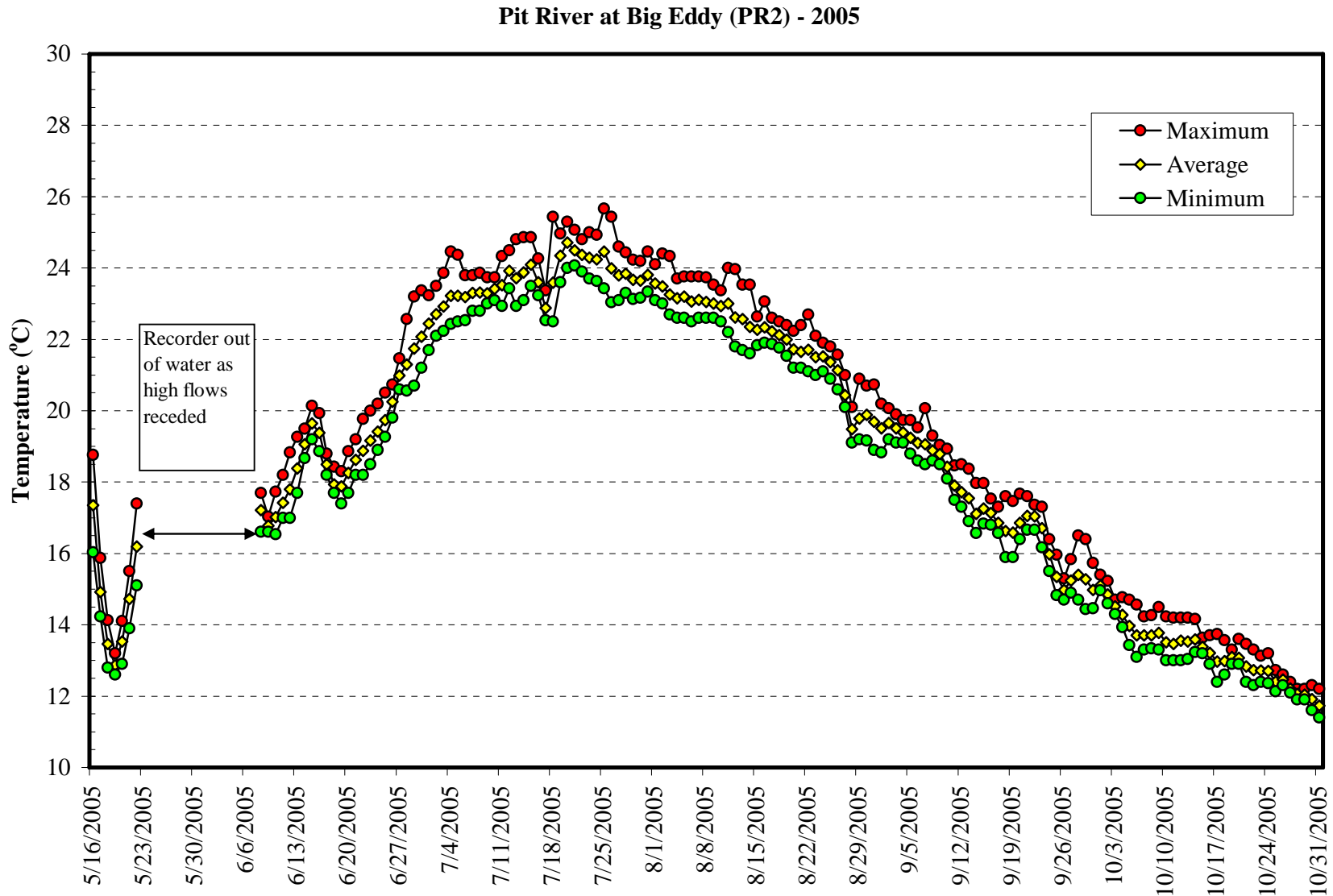


Figure 3.2-6. Daily average, minimum and maximum water temperature in Pit River at Big Eddy (Station PR2).

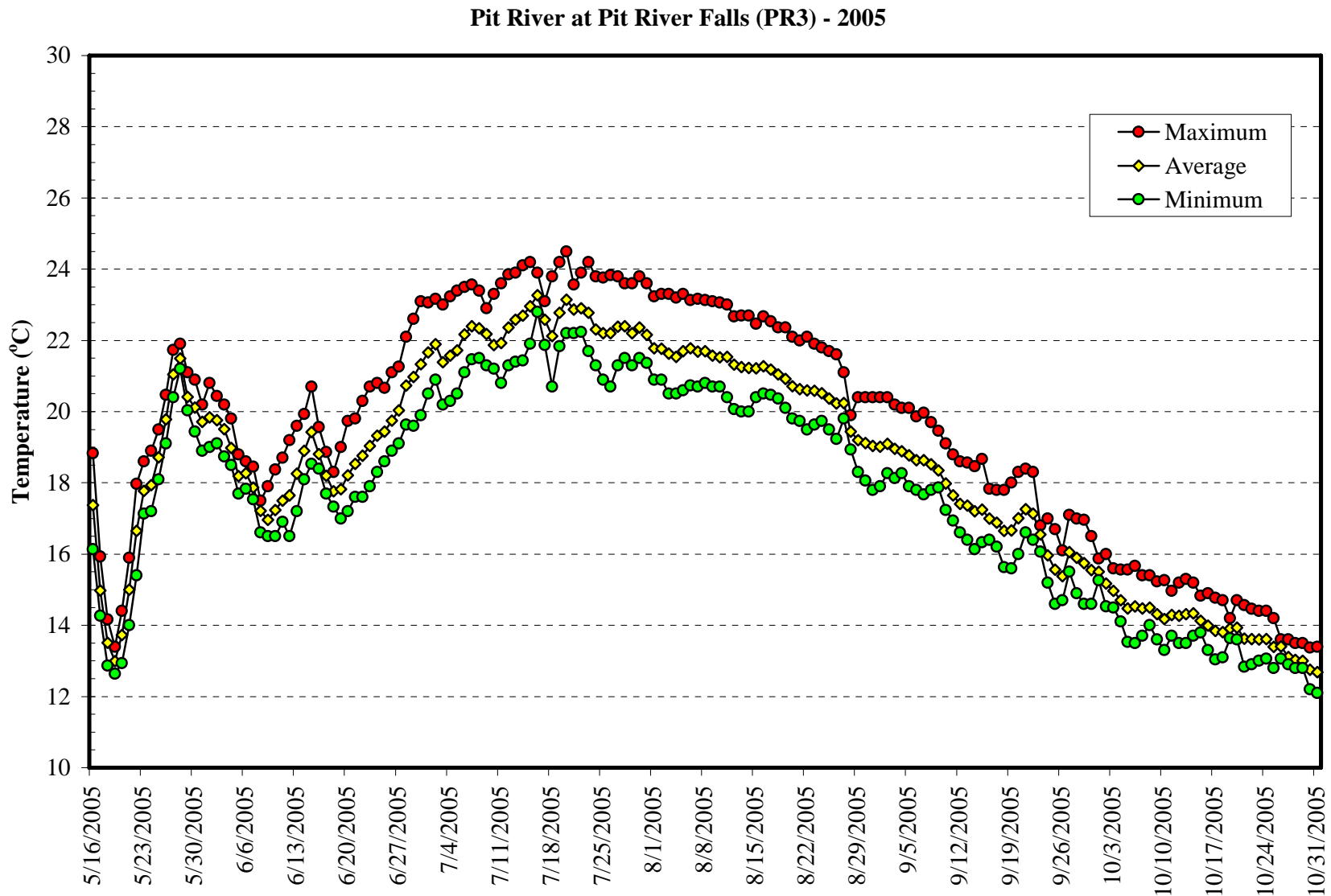


Figure 3.2-7. Daily average, minimum and maximum water temperature in Pit River at Pit Falls (Station PR3).

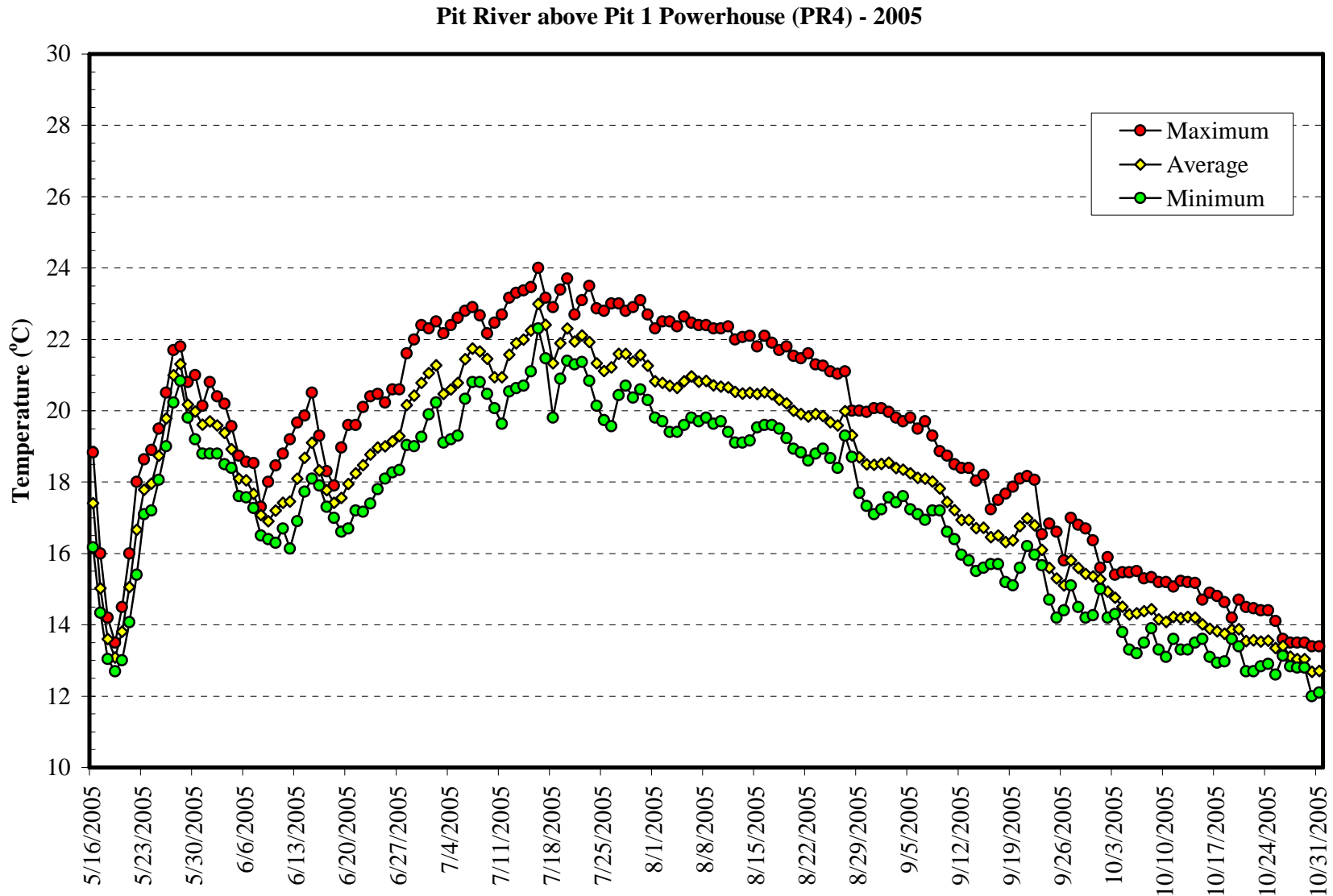


Figure 3.2-8. Daily average, minimum and maximum water temperature in Pit River at Footbridge (Station PR4).

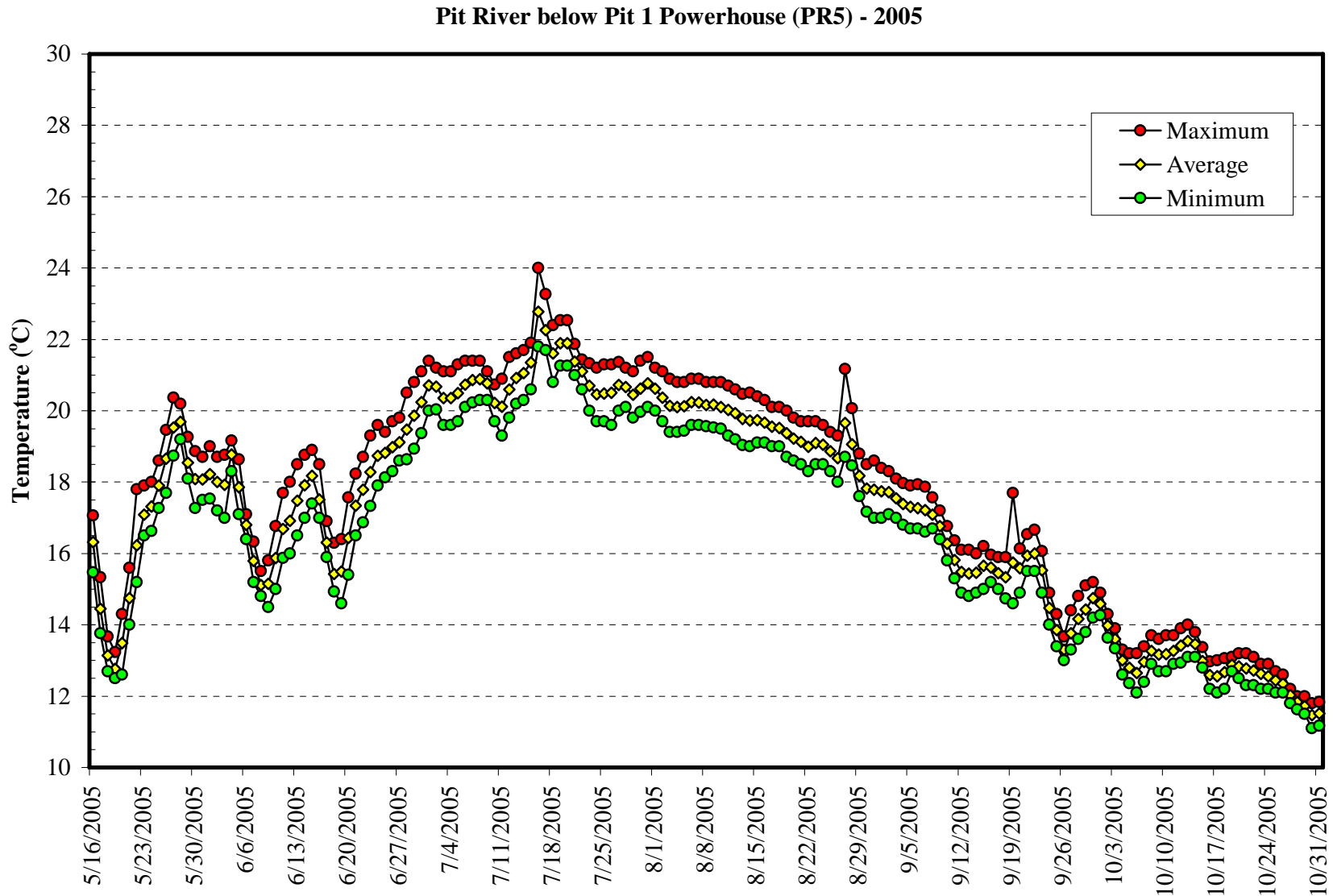


Figure 3.2-9. Daily average, minimum and maximum water temperature in Pit River downstream of Pit 1 Powerhouse (Station PR5).

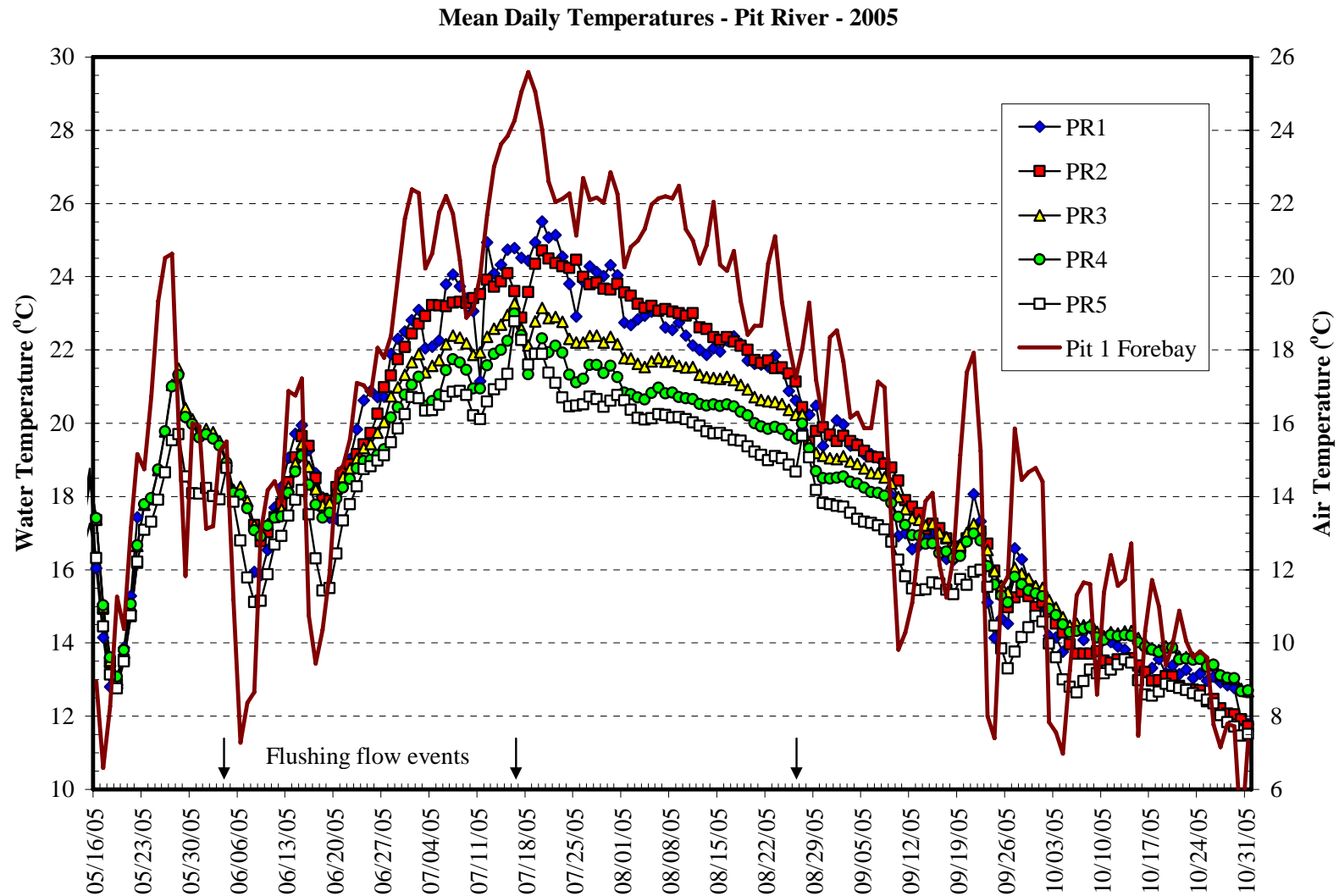


Figure 3.2-10. Comparison of mean daily water temperature from five Pit River stations with mean daily air temperature from Pit 1 Forebay.

Mean Daily Temperatures - Fall River - 2005

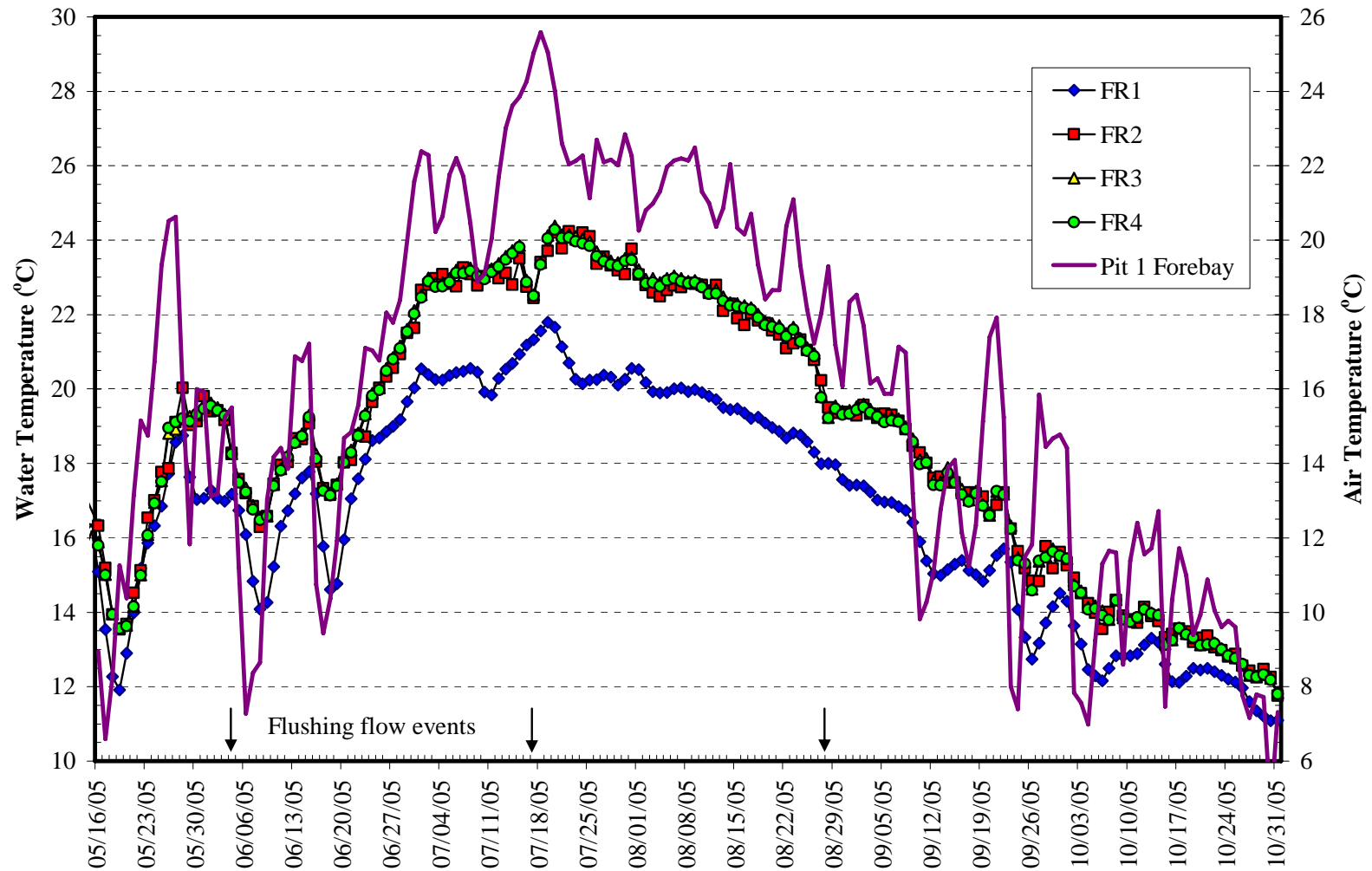
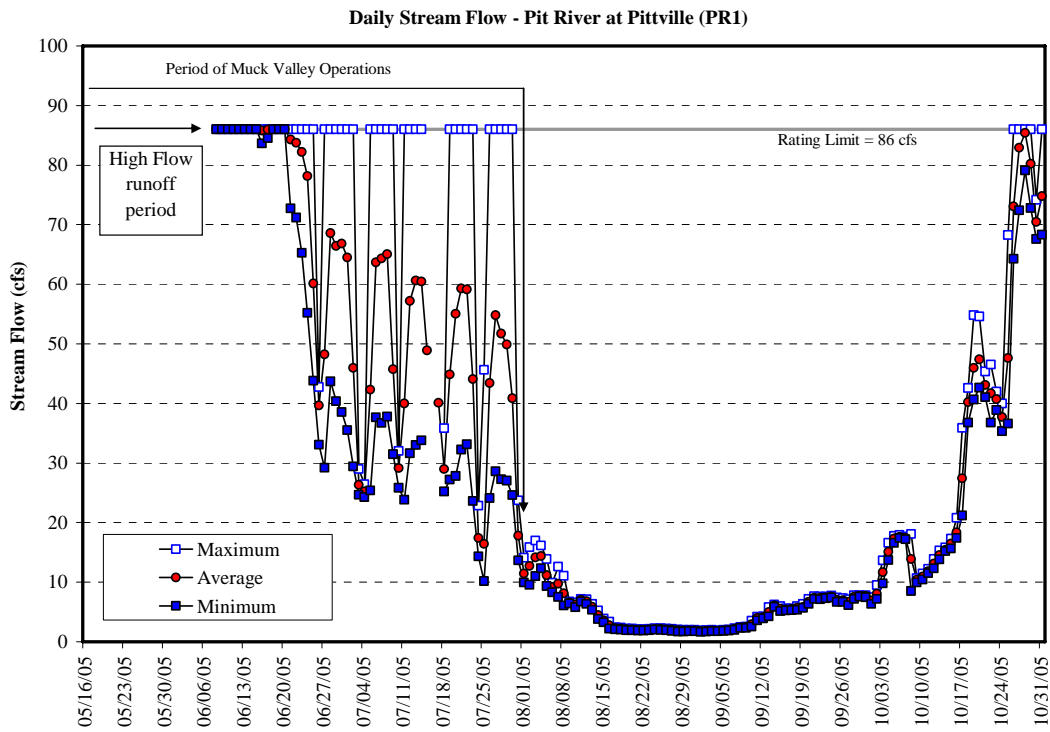
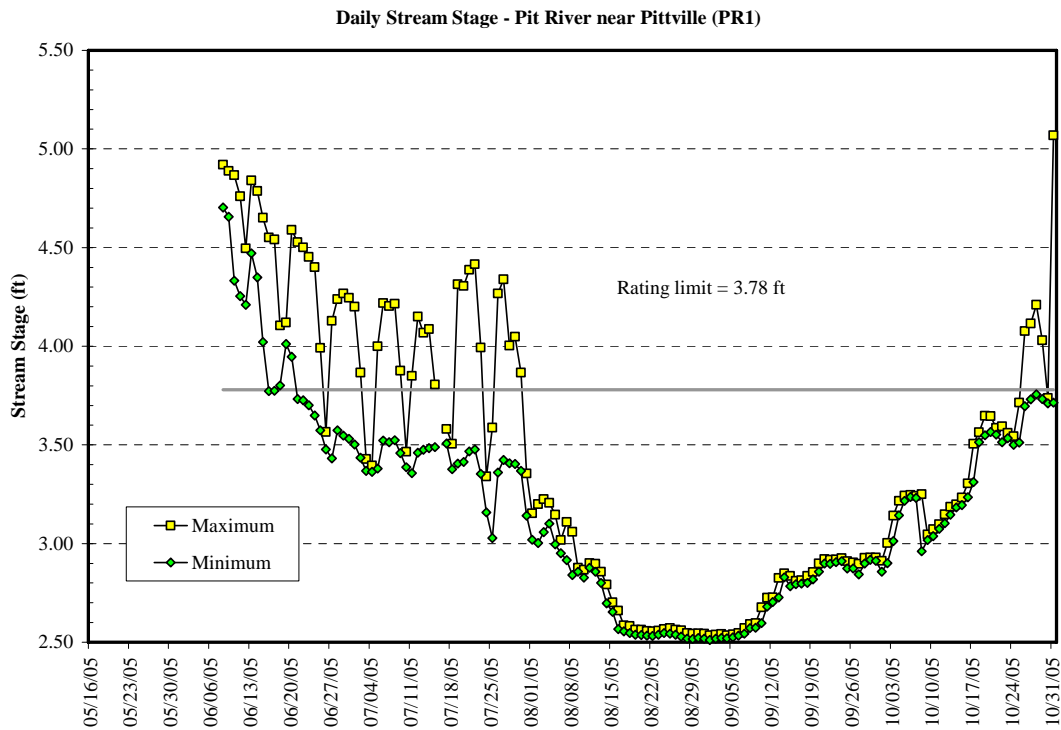


Figure 3.2-11. Comparison of mean daily water temperature from four Fall River stations with mean daily air temperature from Pit 1 Forebay.

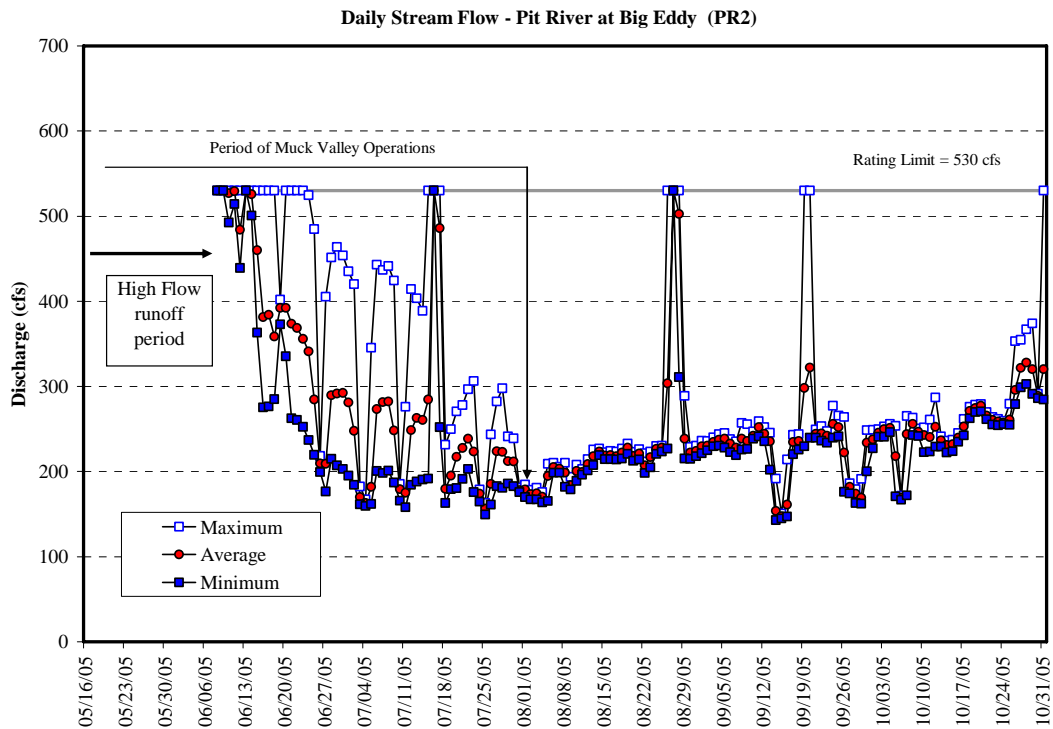


A. Comparison of daily maximum, average, and minimum stream flow.

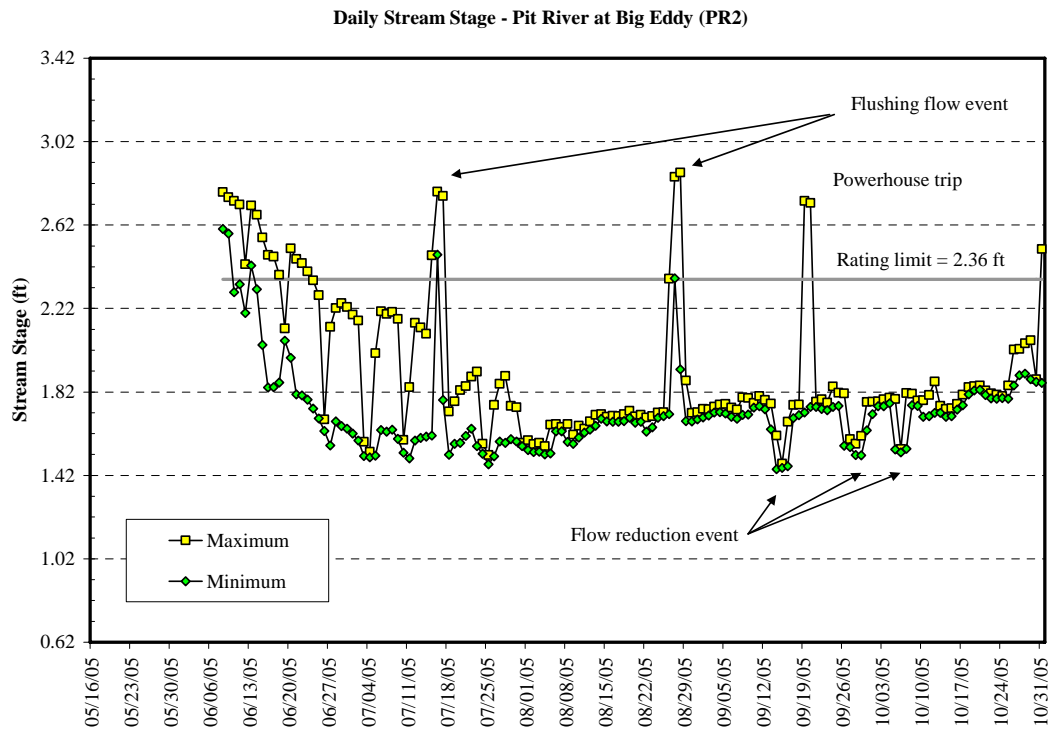


B. Comparison of daily maximum and minimum stream stage.

Figure 3.3-1. Daily stream flow data from the Pit River near Pittville – 2005.

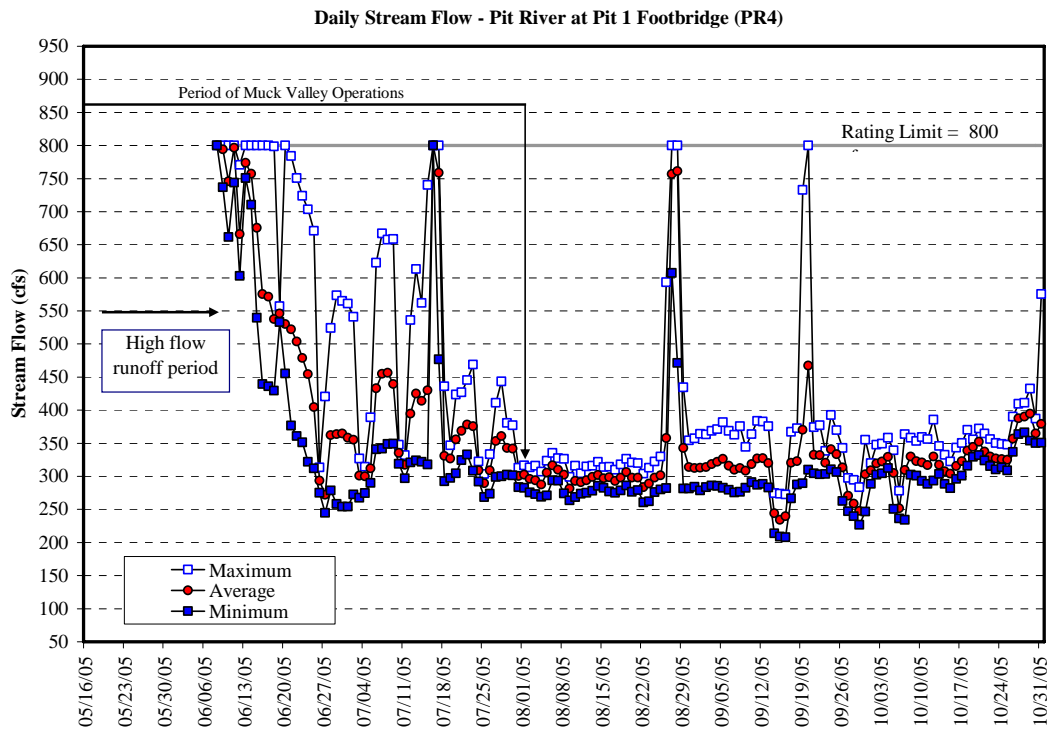


A. Comparison of daily maximum, average, and minimum stream flow.

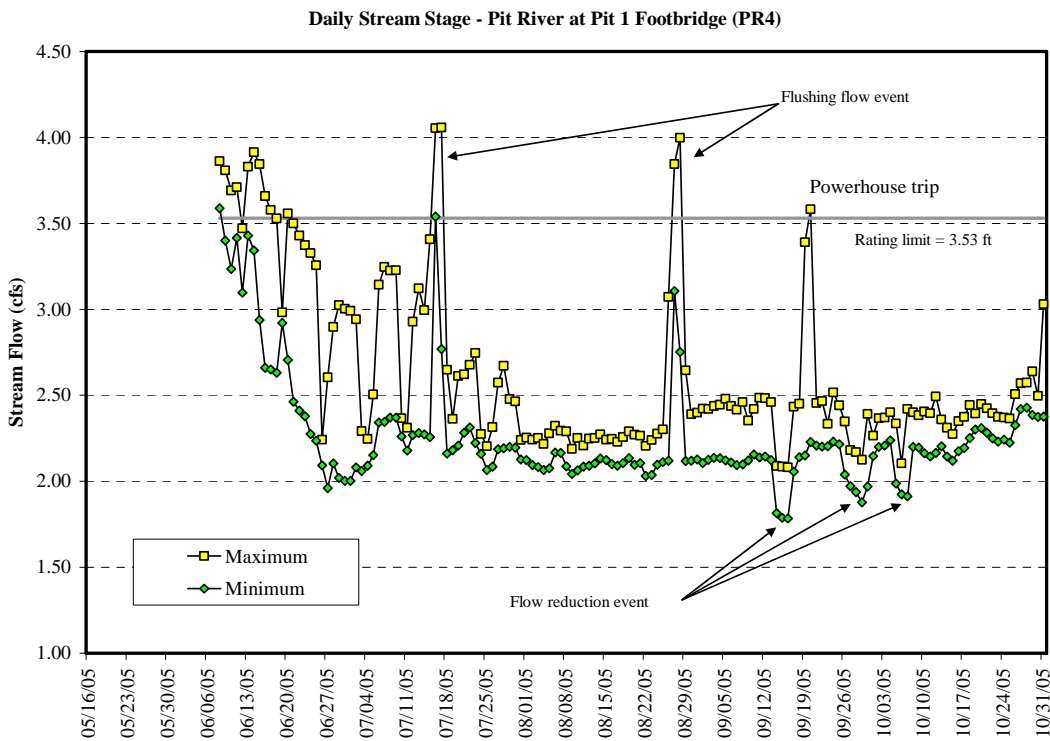


B. Comparison of daily maximum and minimum stream stage.

Figure 3.3-2. Daily stream flow data from the Pit River at Big Eddy – 2005.

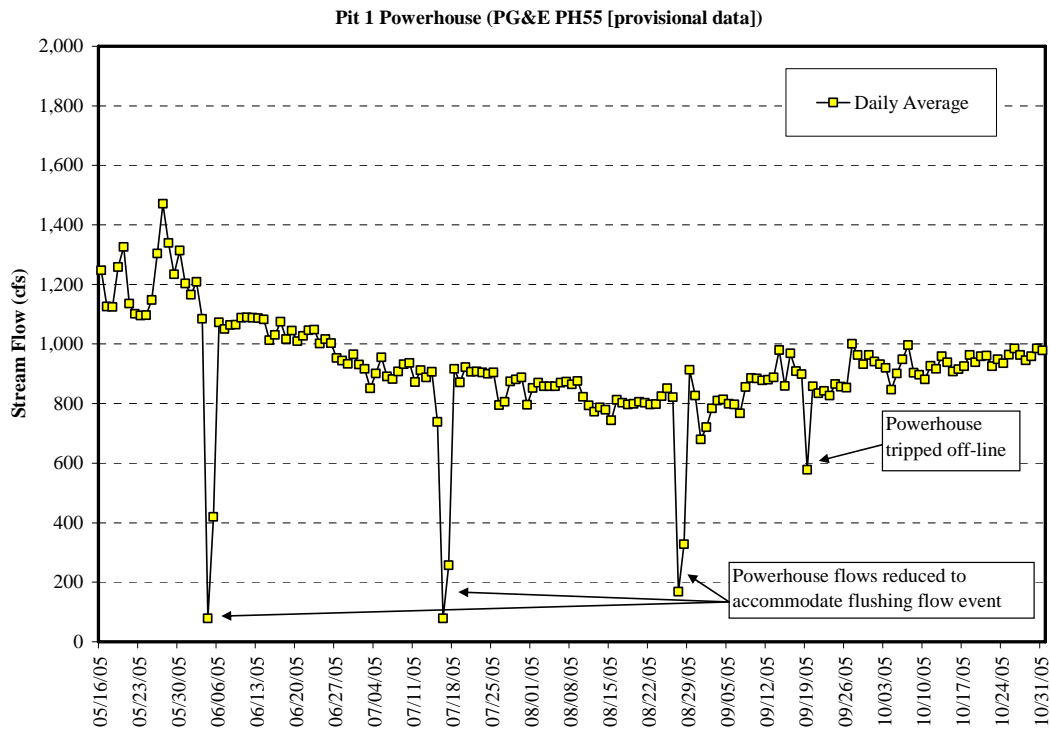


A. Comparison of daily maximum and minimum stream flow.

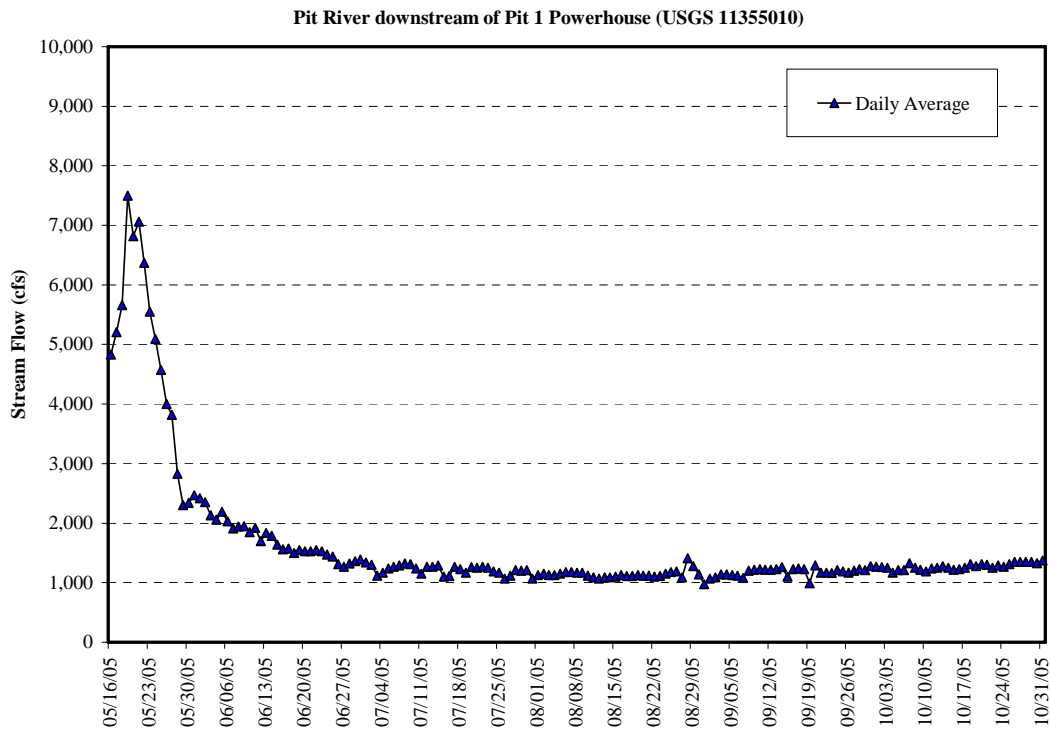


B. Comparison of daily maximum and minimum stream stage.

Figure 3.3-3. Daily stream flow data from the Pit River at the Pit 1 Footbridge – 2005.



A. Mean daily flow from Pit 1 Powerhouse (*Preliminary data*).



B. Mean daily stream flow in the Pit River downstream of Pit 1 Powerhouse (*Preliminary data*).

Figure 3.3-4. Daily stream flow data from Pit 1 Powerhouse and the Pit River downstream of Pit 1 Powerhouse.

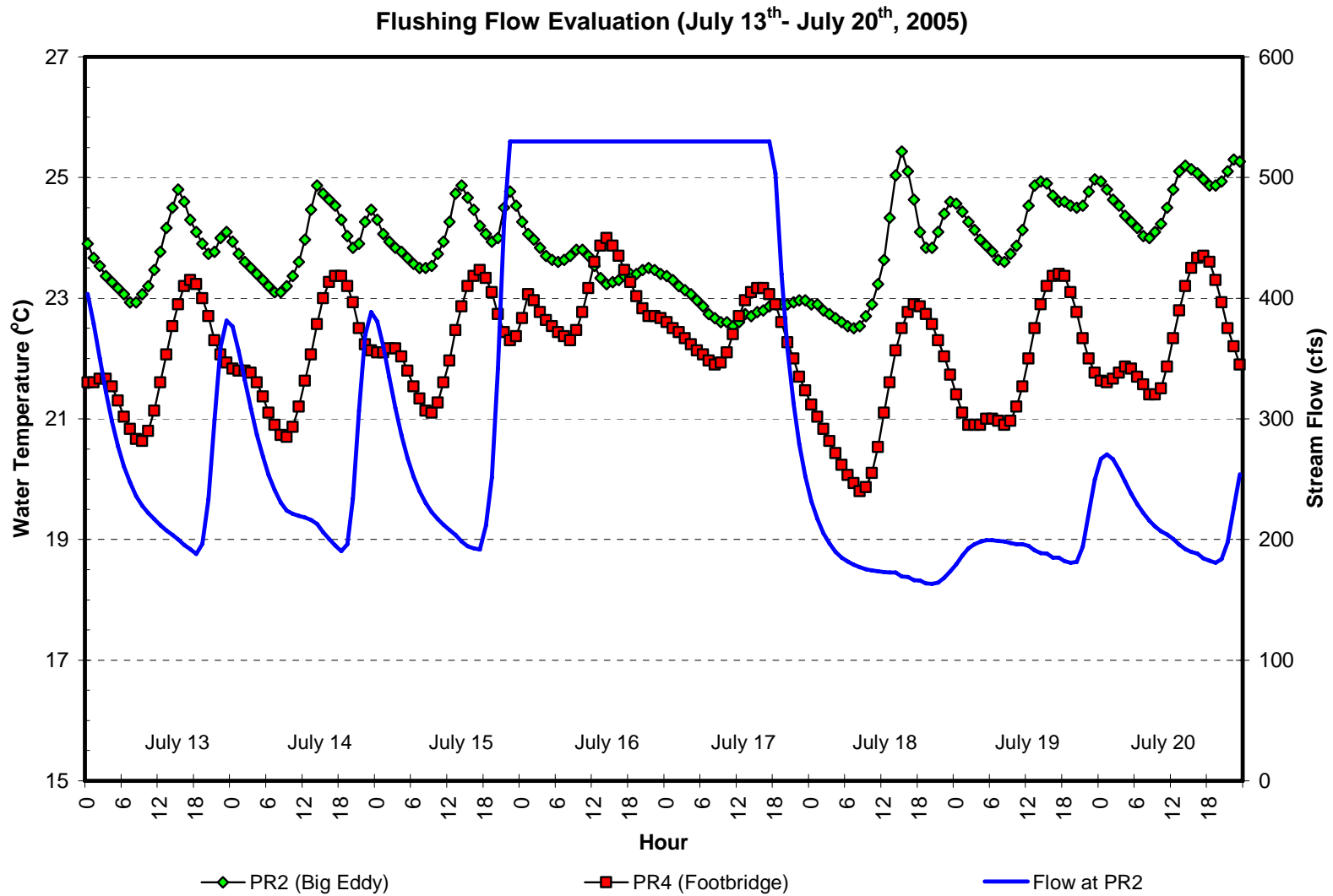


Figure 4.2-1. Evaluation of flushing flow effects on daily average temperature in the Pit River bypass reach – July 2005.

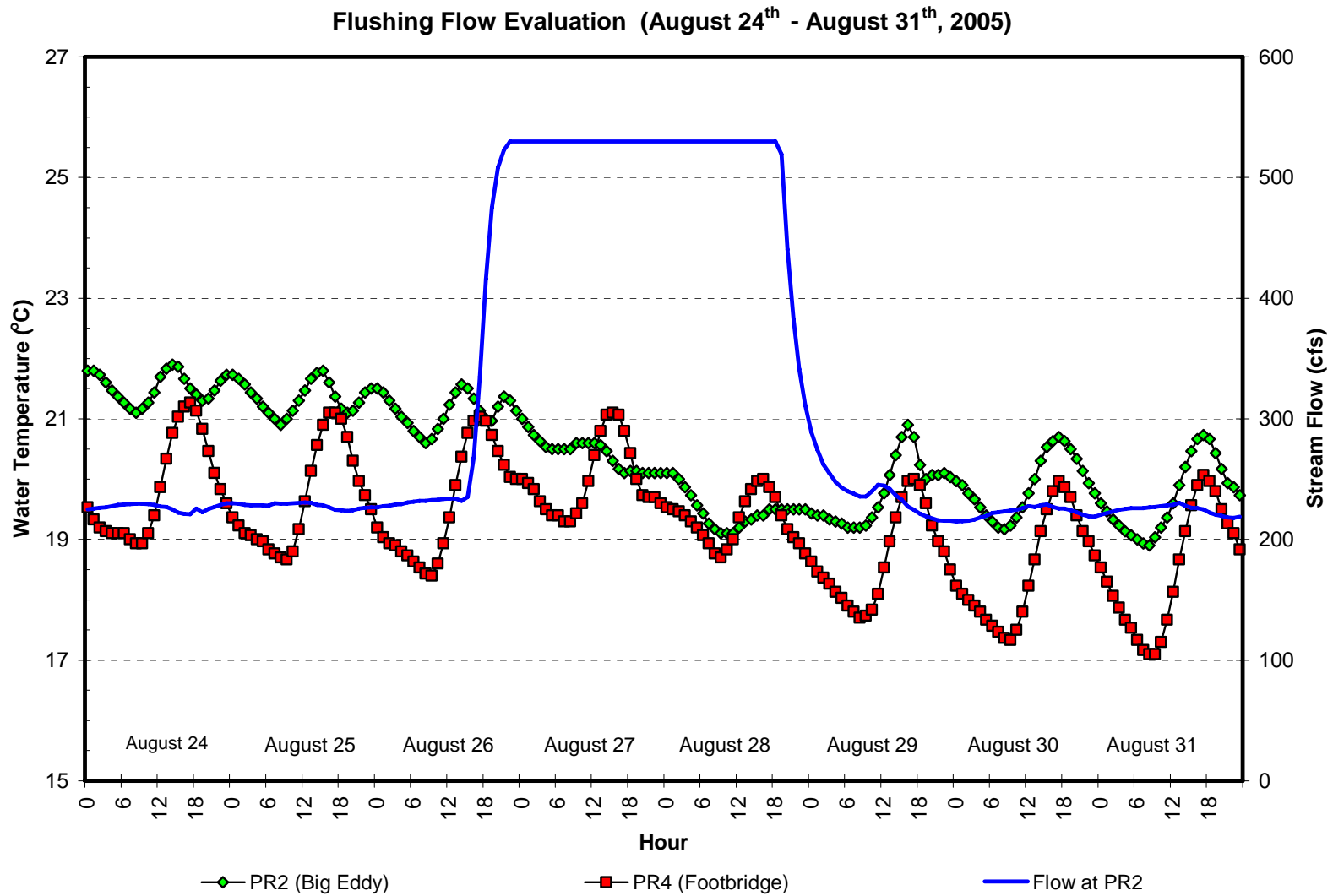


Figure 4.2-2. Evaluation of flushing flow effects on daily average temperature in the Pit River bypass reach – August 2005.

Appendix A

Water Quality and Temperature Equipment QA/QC Documentation

Appendix A1

Field Calibration Worksheet – Insitu Meter

Quanta No.3 Date Time		DO Meter Cal Check											
		Air Calibration								Winkler Check			
		Elevation (ft)	Site	Air T (°C)	DO at Saturation	% Air Saturation	Calculated Value	Instrument Reading	Meter Check	Insitu Reading	Bottle No.	Titration Result	Meter Adj.
May 9, 2005	830	800	Lab	22.0	8.7	97%	8.43	8.65	-0.2	9.4	#176	9.2	Okay
May 23, 2005	940	3300	PR1	18.3	9.4	89%	8.35	8.42	0.0	----	----	----	----
June 7, 2005	915	3300	PR1	11.9	10.9	89%	9.66	9.02	0.6	7.8	# 96	8.6	0.8
June 7, 2005	----	----	----	----	----	----	----	----	----	----	----	----	----
June 23, 2005	1000	3300	PR1	16.6	9.8	89%	8.67	10.10	-1.4	----	----	----	----
July 12, 2005	900	3300	PR1	9.4	11.5	89%	10.25	11.38	-1.1	----	----	----	----
July 19, 2005	1015	3300	PR1	29.2	7.6	89%	6.77	6.93	0.0	8.3	# 96	8.5	Okay
August 5, 2005	930	3300	PR1	25.0	8.2	89%	7.28	7.52	-0.2	----	----	----	----
August 16, 2005	921	3300	PR1	21.1	8.9	89%	7.87	7.97	0.0	----	----	----	----
August 31, 2005	1015	3300	PR1	26.2	8.0	89%	7.13	7.28	0.0	----	----	----	----
Sept. 14, 2005	1540	3300	PR1	24.4	8.3	89%	7.37	7.61	-0.2	----	----	----	----
Sept. 27, 2005	1000	2460	P4	14.2	10.3	92%	9.43	9.37	0.0	9.23	#176	9.3	Okay
October 4, 2005	----	----	----	----	----	----	----	----	----	----	----	----	----
October 5, 2005	----	----	----	----	----	----	----	----	----	----	----	----	----
October 11, 2005	905	3300	FR1	19.4	9.2	89%	8.15	7.85	0.3	----	----	----	----
November 2, 2005	1029	3300	PR1	16.7	9.7	89%	8.64	8.53	0.0	----	----	----	----

Appendix A1

Field Calibration Worksheet – Insitu Meter

Quanta No.3		pH Check				
Date	Time	7 Standard		10 Standard		Action
		Value	Temp	Value	Temp	
May 9, 2005	830	----	----	----	----	Okay
May 23, 2005	940	----	----	----	----	Okay
June 7, 2005	915	7.43	25.25	10.42	24.24	Refilled junction
June 7, 2005	----	7.00		9.98		New Calibration
June 23, 2005	1000	----	----	----	----	Okay
July 12, 2005	900	----	----	----	----	Okay
July 19, 2005	1015	----	----	----	----	Okay
August 5, 2005	930	----	----	----	----	Okay
August 16, 2005	921	----	----	----	----	Okay
August 31, 2005	1015	----	----	----	----	Okay
Sept. 14, 2005	1540	----	----	----	----	Okay
Sept. 27, 2005	1000	----	----	----	----	Okay
October 4, 2005	----	7.54	14.01	10.61	14.16	Refilled junction, added salt rings, new junction.
October 5, 2005	----	7.00		9.98		New Calibration
October 11, 2005	905	----	----	----	----	Okay
November 2, 2005	1029	----	----	----	----	Okay

Appendix A2

Recorder Deployment Tracking - Pit 1 Project

Vemco Mini (S/N)								
Date	FR1A	FR1B	FR2A	FR2B	FR3A	FR3B	FR4A	FR4B
10-May	7005	9351	7000	7004	7001	7003	6999	935
23-May	7007	----	9352	----	9348	----	----	----
7-Jun	6998	----	----	----	9346	----	7005	----
23-Jun	9353	----	9348	----	7002	----	6999	----
12-Jul	7005	----	9346	----	7001	----	9350	----
5-Aug	9348	----	7007	----	7002	----	7006	----
14-Sep	7001	----	9346	----	7005	----	9349	----
27-Sep	----	----	----	----	----	----	----	----
2-Nov	7001	9351	9346	7004	7005	7003	9349	935

Vemco Mini (S/N)							
Date	PR1A	PR2A	PR3A	PR3B	PR4A	PR5A	PR5B
10-May	7006	7008	9353	9349	9346	6998	9350
23-May	936	937	----	----	7002	943	----
7-Jun	7001	7008	7006	----	7000	----	----
23-Jun	936	----	----	937	----	----	7007
12-Jul	6998	----	9352	----	----	----	9349
5-Aug	----	----	936	----	----	----	9353
14-Sep	----	----	----	----	----	----	----
27-Sep	----	----	9348	----	----	----	7002
2-Nov	6998	7008	9348	937	700	943	7002

Appendix B
In Situ Water Quality Data

Appendix B

Pit 1 Compliance Monitoring - Insitu Water Quality

Station ID	Date	Time	Temp. (°C)	Dissolved Oxygen		pH (units)	Specific Conductivity (µS/cm)	TDS (g/l)	Turbidity (NTU)
				Level (mg/l)	Sat (%)				
FR1	05/10/05	832	10.5	8.2	83	8.0	131	0.08	16.4
FR1	05/23/05	1000	15.4	8.4	95	8.4	134	0.09	4.8
FR1	06/07/05	1215	14.8	8.9	99	8.7	146	0.09	4.6
FR1	06/23/05	1245	17.9	10.0	119	8.4	147	0.09	3.3
FR1	07/12/05	1324	20.3	8.9	110	8.4	149	0.10	0.8
FR1	07/19/05	1250	21.4	9.5	121	8.4	149	0.10	0.4
FR1	08/05/05	1030	19.3	9.1	111	8.3	149	0.10	1.6
FR1	08/16/05	921	18.8	9.0	109	8.4	151	0.10	2.0
FR1	08/31/05	1107	17.0	9.2	107	8.2	154	0.10	0.9
FR1	09/14/05	1619	15.4	9.5	107	8.1	151	0.10	1.6
FR1	09/27/05	1210	12.9	8.7	93	7.8	154	0.10	2.2
FR1	10/11/05	920	12.4	9.9	104	8.3	154	0.10	1.1
FR1	11/02/05	1515	10.8	9.7	99	8.0	152	0.10	1.8
Maximum			21.4	10.0	121	8.7	154	0.10	16.4
Minimum			10.5	8.2	83	7.8	131	0.08	0.4
Average			15.9	9.1	104	8.3	148	0.09	3.2
FR2	05/10/05	900	13.7	8.6	93	9.0	138	0.09	6.5
FR2	05/23/05	1016	15.5	9.3	105	8.6	130	0.08	4.4
FR2	06/07/05	1200	16.8	9.3	108	9.0	144	0.09	7.6
FR2	06/23/05	1215	20.1	9.6	119	8.6	147	0.09	1.6
FR2	07/12/05	1300	25.1	8.0	109	8.8	148	0.09	1.0
FR2	07/19/05	1130	24.3	8.6	115	8.6	149	0.10	0.4
FR2	08/05/05	1055	23.0	11.9	156	9.1	151	0.10	3.9
FR2	08/16/05	953	21.9	12.3	157	9.1	151	0.10	8.6
FR2	08/31/05	1123	19.3	9.3	113	8.7	153	0.10	3.9
FR2	09/14/05	1637	19.0	9.8	119	8.4	153	0.10	0.2
FR2	09/27/05	1230	15.0	9.2	102	8.5	153	0.10	3.9
FR2	10/11/05	932	13.1	9.8	105	8.6	153	0.10	2.8
FR2	11/02/05	1445	11.3	10.5	108	8.5	150	0.10	6.4
Maximum			25.1	12.3	157	9.1	153	0.10	8.6
Minimum			11.3	8.0	93	8.4	130	0.08	0.2
Average			18.3	9.7	116	8.7	148	0.09	4.0

Appendix B
Pit 1 Compliance Monitoring - Insitu Water Quality

Station ID	Date	Time	Temp. (°C)	Dissolved Oxygen		pH (units)	Specific Conductivity (µS/cm)	TDS (g/l)	Turbidity (NTU)
				Level (mg/l)	Sat (%)				
FR3	05/10/05	925	13.4	7.6	82	8.5	138	0.09	14.3
FR3	05/23/05	1035	15.1	9.4	105	8.6	130	0.08	5.4
FR3	06/07/05	1130	16.6	9.1	105	8.9	143	0.09	3.4
FR3	06/23/05	1120	18.5	9.5	114	8.8	146	0.09	0.9
FR3	07/12/05	1230	23.3	8.4	111	8.7	147	0.09	1.4
FR3	07/19/05	1110	23.2	8.7	114	8.4	150	0.10	0.3
FR3	08/05/05	1115	22.1	8.0	103	8.8	152	0.10	2.0
FR3	08/16/05	1007	21.7	6.9	88	8.8	151	0.10	6.6
FR3	08/31/05	1132	19.0	9.3	112	8.6	153	0.10	0.7
FR3	09/14/05	1700	18.6	11.1	134	8.7	153	0.10	0.2
FR3	09/27/05	1240	15.4	8.8	99	8.2	154	0.10	0.9
FR3	10/11/05	945	13.2	8.1	88	8.2	154	0.10	1.7
FR3	11/02/05	1326	11.2	9.2	94	8.2	152	0.10	2.6
Maximum			23.3	11.1	134	8.9	154	0.10	14.3
Minimum			11.2	6.9	82	8.2	130	0.08	0.2
Average			17.8	8.8	104	8.6	148	0.09	3.1
FR4	05/10/05	943	13.7	8.9	97	8.6	139	0.09	16.4
FR4	05/23/05	1045	15.2	8.8	99	8.6	130	0.08	6.4
FR4	06/07/05	1445	16.8	8.8	102	9.0	144	0.09	11.6
FR4	06/23/05	1145	18.8	8.0	97	8.8	147	0.09	4.4
FR4	07/12/05	1245	23.5	6.8	89	8.8	147	0.09	5.1
FR4	07/19/05	1118	23.4	7.4	98	8.4	149	0.10	1.0
FR4	08/05/05	1125	22.3	7.3	94	8.8	123	0.08	3.7
FR4	08/16/05	1016	21.8	7.7	98	8.7	152	0.10	6.1
FR4	08/31/05	1145	19.0	8.1	99	8.5	153	0.10	2.5
FR4	09/14/05	1705	18.5	7.6	91	8.6	154	0.10	1.5
FR4	09/27/05	1250	15.9	8.3	94	8.3	153	0.10	1.6
FR4	10/11/05	955	13.2	9.3	99	8.3	154	0.10	2.6
FR4	11/02/05	1350	11.3	9.9	102	8.3	151	0.10	4.6
Maximum			23.5	9.9	102	9.0	154	0.10	16.4
Minimum			11.3	6.8	89	8.3	123	0.08	1.0
Average			18.0	8.2	97	8.6	146	0.09	5.2

Appendix B

Pit 1 Compliance Monitoring - Insitu Water Quality

Station ID	Date	Time	Temp. (°C)	Dissolved Oxygen		pH (units)	Specific Conductivity (µS/cm)	TDS (g/l)	Turbidity (NTU)
				Level (mg/l)	Sat (%)				
PR1	05/11/05	840	11.0	9.4	96	8.2	130	0.08	192.2
PR1	05/23/05	1215	17.5	8.0	94	8.2	149	0.10	65.6
PR1	06/07/05	915	16.9	8.0	93	8.2	198	0.13	95.5
PR1	06/23/05	1000	19.5	7.7	95	8.3	216	0.14	25.6
PR1	07/12/05	910	21.8	7.0	90	8.1	230	0.15	13.8
PR1	07/19/05	1021	24.6	8.3	112	8.3	225	0.14	15.9
PR1	08/05/05	910	20.8	8.9	112	8.2	239	0.15	12.4
PR1	08/16/05	1200	22.4	10.2	132	8.3	233	0.15	6.5
PR1	08/31/05	1027	17.4	8.9	104	8.3	210	0.13	3.2
PR1	09/14/05	1545	20.2	10.2	127	8.8	287	0.18	13.1
PR1	09/27/05	1350	18.5	12.7	153	8.6	286	0.18	11.3
PR1	10/11/05	1043	12.9	11.0	117	8.4	300	0.19	15.3
PR1	11/02/05	1130	11.1	9.7	99	8.1	309	0.20	26.8
			Maximum	24.6	12.7	153	8.8	309	192.2
			Minimum	11.0	7.0	90	8.1	130	3.2
			Average	18.0	9.2	110	8.3	232	38.2
PR2	05/11/05	938	11.2	9.0	92	8.1	142	0.09	184.3
PR2	05/23/05	1130	17.9	8.1	95	8.2	145	0.09	61.6
PR2	06/07/05	1038	18.1	8.1	96	8.0	199	0.13	70.0
PR2	06/23/05	1038							
PR2	07/12/05	1147	24.2	6.2	83	8.1	177	0.11	7.7
PR2	07/19/05	1054	24.2	7.3	98	7.9	182	0.12	7.7
PR2	08/05/05	1145	23.4	7.5	98	8.7	180	0.12	11.2
PR2	08/16/05	1038	22.3	7.4	95	8.4	179	0.11	12.0
PR2	08/31/05	1204	19.7	7.9	97	8.0	176	0.11	8.7
PR2	09/15/05	1242	18.1	8.3	98	8.1	174	0.11	13.6
PR2	09/27/05	1315	15.5	8.4	94	7.9	182	0.12	8.1
PR2	10/11/05	1015	13.1	9.3	99	8.2	184	0.12	7.6
PR2	11/02/05	1230	11.2	8.7	88	7.9	248	0.16	11.3
			Maximum	24.2	9.3	99	8.7	248	184.3
			Minimum	11.2	6.2	83	7.9	142	7.6
			Average	18.2	8.0	95	8.1	181	33.6

Appendix B
Pit 1 Compliance Monitoring - Insitu Water Quality

Station ID	Date	Time	Temp. (°C)	Dissolved Oxygen		pH (units)	Specific Conductivity (µS/cm)	TDS (g/l)	Turbidity (NTU)
				Level (mg/l)	Sat (%)				
PR3	05/10/05	1332	12.1	10.2	106	8.3	149	0.10	215.9
PR3	05/23/05	1430	18.3	9.0	106	8.3	146	0.09	71.3
PR3	06/07/05	1455	18.4	8.4	100	8.3	197	0.13	58.1
PR3	06/23/05	1705	20.6	7.4	91	8.0	191	0.12	28.0
PR3	07/12/05	1515	23.8	6.6	87	8.5	175	0.11	4.3
PR3	07/19/05	---							
PR3	08/05/05	1345	22.8	7.8	101	8.4	178	0.11	7.8
PR3	08/16/05	1435	17.5	10.0	116	8.3	135	0.09	3.8
PR3	08/31/05	1347	19.8	8.4	102	8.3	175	0.11	5.9
PR3	09/15/05	1449	18.4	8.1	96	8.3	173	0.11	3.9
PR3	09/29/05	1040	14.9	9.2	102	8.1	189	0.12	3.7
PR3	10/11/05	1215	14.3	11.0	119	8.4	179	0.11	4.6
PR3	11/02/05	1715	12.4	10.2	107	8.4	232	0.15	8.5
			Maximum	23.8	11.0	119	232	0.15	215.9
			Minimum	12.1	6.6	87	135	0.09	3.7
			Average	17.8	8.9	103	177	0.11	34.6
PR4	05/10/05	1139	12.0	9.9	102	8.4	149	0.10	209.1
PR4	05/23/05	1340	18.2	8.3	98	8.4	146	0.09	70.2
PR4	06/07/05	1345	18.3	8.1	95	8.3	195	0.12	60.8
PR4	06/23/05	1415	20.0	7.3	89	8.3	184	0.12	24.5
PR4	07/12/05	1418	22.8	6.9	89	8.6	172	0.11	4.1
PR4	07/19/05	1241	22.6	7.9	101	8.3	177	0.11	5.9
PR4	08/05/05	1238	21.5	8.0	100	8.6	174	0.11	6.8
PR4	08/16/05	1415	17.1	9.2	106	8.1	171	0.11	3.3
PR4	08/31/05	1304	19.0	8.5	102	8.2	173	0.11	3.8
PR4	09/15/05	1400	17.7	8.3	97	8.3	170	0.11	4.7
PR4	09/27/05	1455	16.8	9.4	108	8.4	175	0.11	2.8
PR4	10/11/05	1300	14.5	9.7	106	8.5	177	0.11	4.1
PR4	11/02/05	1610	12.6	9.8	102	8.4	225	0.14	7.6
			Maximum	22.8	9.9	108	225	0.14	209.1
			Minimum	12.0	6.9	89	146	0.09	2.8
			Average	17.9	8.6	100	176	0.11	31.3

Appendix B

Pit 1 Compliance Monitoring - Insitu Water Quality

Station ID	Date	Time	Temp. (°C)	Dissolved Oxygen		pH (units)	Specific Conductivity (µS/cm)	TDS (g/l)	Turbidity (NTU)
				Level (mg/l)	Sat (%)				
PR5	05/10/05	1037	11.0	9.1	91	8.1	138	0.09	94.1
PR5	05/23/05	1315	17.2	8.3	95	8.4	142	0.09	47.6
PR5	06/07/05	1300	15.8	9.1	101	9.0	159	0.10	19.9
PR5	06/23/05	1340	18.4	8.5	100	8.4	159	0.10	7.4
PR5	07/12/05	1352	20.8	7.8	96	8.5	151	0.10	2.5
PR5	07/19/05	1220	21.7	8.8	110	8.3	154	0.10	1.5
PR5	08/05/05	1215	19.9	8.4	102	8.4	155	0.10	2.1
PR5	08/17/05	1615	20.1	8.8	107	8.3	153	0.10	1.7
PR5	08/31/05	1236	17.6	8.5	98	8.2	158	0.10	1.8
PR5	09/15/05	1338	16.1	8.6	97	8.1	159	0.10	3.8
PR5	09/27/05	1430	14.0	9.0	96	8.0	159	0.10	2.7
PR5	10/11/05	1120	12.8	9.9	103	8.3	157	0.10	1.2
PR5	11/02/05	1545	11.3	10.1	102	8.2	164	0.10	3.3
Maximum			21.7	10.1	110	9.0	164	0.10	94.1
Minimum			11.0	7.8	91	8.0	138	0.09	1.2
Average			16.7	8.8	100	8.3	154	0.10	14.6

Appendix C

Temperature Data

Appendix C

Daily Summary of Hourly Average Water Temperature

FR1 - Fall River upstream of Pit 1

Diversión

Date	Average	Maximum	Minimum
05/16/05	15.1	15.8	14.3
05/17/05	13.5	14.2	12.8
05/18/05	12.3	12.7	11.9
05/19/05	11.9	12.4	11.5
05/20/05	12.9	13.9	12.2
05/21/05	14.0	14.8	13.3
05/22/05	15.2	15.9	14.7
05/23/05	15.9	16.5	15.4
05/24/05	16.3	16.9	15.9
05/25/05	16.9	17.5	16.3
05/26/05	17.7	18.6	17.0
05/27/05	18.6	19.4	17.9
05/28/05	18.8	19.4	18.3
05/29/05	17.6	18.2	17.2
05/30/05	17.0	17.7	16.5
05/31/05	17.1	17.8	16.4
06/01/05	17.3	18.0	16.6
06/02/05	17.1	17.7	16.4
06/03/05	17.0	17.8	16.3
06/04/05	17.2	18.0	16.5
06/05/05	16.7	17.3	16.1
06/06/05	16.1	16.5	15.6
06/07/05	14.8	15.5	14.3
06/08/05	14.1	14.5	13.8
06/09/05	14.3	15.0	13.7
06/10/05	15.2	16.1	14.4
06/11/05	16.3	17.2	15.5
06/12/05	16.7	17.6	16.0
06/13/05	17.2	18.1	16.4
06/14/05	17.6	18.5	16.8
06/15/05	17.8	18.4	17.0
06/16/05	17.2	18.0	16.5
06/17/05	15.8	16.4	15.4
06/18/05	14.6	15.3	14.3
06/19/05	14.8	15.7	14.1
06/20/05	16.0	17.0	15.1
06/21/05	17.1	18.0	16.3
06/22/05	17.6	18.4	16.7
06/23/05	18.1	19.0	17.3
06/24/05	18.6	19.4	17.8
06/25/05	18.7	19.2	18.1
06/26/05	18.9	19.5	18.2
06/27/05	19.0	19.6	18.4
06/28/05	19.2	19.9	18.5
06/29/05	19.7	20.6	18.9

FR2 - Fall River at Pit 1 Forebay Dam

Date	Average	Maximum	Minimum
05/16/05	16.3	16.9	15.8
05/17/05	15.2	15.8	14.6
05/18/05	13.9	14.5	13.5
05/19/05	13.5	14.2	13.1
05/20/05	13.7	14.4	12.9
05/21/05	14.5	16.9	13.3
05/22/05	15.1	16.5	14.1
05/23/05	16.5	19.0	14.8
05/24/05	17.0	18.3	15.7
05/25/05	17.8	19.6	16.4
05/26/05	17.9	20.1	16.6
05/27/05	19.1	20.9	17.0
05/28/05	20.0	21.4	18.3
05/29/05	19.0	20.4	18.4
05/30/05	19.1	20.1	18.5
05/31/05	19.8	21.2	18.3
06/01/05	19.4	21.2	17.5
06/02/05	19.4	20.1	18.5
06/03/05	19.2	20.5	18.3
06/04/05	18.3	19.6	17.7
06/05/05	17.6	18.3	17.0
06/06/05	17.2	17.6	16.9
06/07/05	16.9	17.6	16.3
06/08/05	16.3	16.8	16.0
06/09/05	16.6	17.9	16.0
06/10/05	17.5	19.8	15.7
06/11/05	18.0	19.5	15.9
06/12/05	18.0	19.9	16.7
06/13/05	18.7	20.3	17.2
06/14/05	18.7	20.0	16.9
06/15/05	19.1	20.0	18.4
06/16/05	18.1	19.3	17.5
06/17/05	17.3	17.6	17.2
06/18/05	17.2	17.5	16.9
06/19/05	17.4	18.6	16.6
06/20/05	18.0	19.4	16.9
06/21/05	18.1	19.4	16.5
06/22/05	18.8	20.2	17.2
06/23/05	18.7	20.0	17.6
06/24/05	19.6	21.0	18.6
06/25/05	20.0	21.1	18.9
06/26/05	20.3	21.5	19.1
06/27/05	20.6	21.4	19.6
06/28/05	20.9	22.7	20.1
06/29/05	21.5	23.1	20.2

Appendix C

Daily Summary of Hourly Average Water Temperature

FR1 - Fall River upstream of Pit 1

Diversión

Date	Average	Maximum	Minimum
06/30/05	20.0	20.9	19.2
07/01/05	20.5	21.2	19.8
07/02/05	20.4	20.9	19.7
07/03/05	20.3	20.9	19.6
07/04/05	20.2	20.9	19.5
07/05/05	20.4	21.0	19.7
07/06/05	20.4	21.0	19.8
07/07/05	20.5	21.1	19.8
07/08/05	20.5	21.1	19.9
07/09/05	20.5	20.8	20.0
07/10/05	19.9	20.4	19.3
07/11/05	19.8	20.6	19.2
07/12/05	20.3	21.1	19.5
07/13/05	20.5	21.2	19.8
07/14/05	20.7	21.3	20.0
07/15/05	20.9	21.6	20.3
07/16/05	21.2	21.8	20.5
07/17/05	21.3	22.0	20.6
07/18/05	21.6	22.2	20.9
07/19/05	21.8	22.3	21.2
07/20/05	21.7	22.2	21.0
07/21/05	21.1	21.8	20.7
07/22/05	20.7	21.1	20.2
07/23/05	20.3	20.7	19.7
07/24/05	20.1	20.9	19.4
07/25/05	20.2	20.8	19.6
07/26/05	20.3	20.9	19.6
07/27/05	20.4	20.9	19.7
07/28/05	20.3	20.7	19.8
07/29/05	20.1	20.6	19.5
07/30/05	20.3	20.9	19.6
07/31/05	20.6	21.1	20.0
08/01/05	20.5	20.9	20.0
08/02/05	20.2	20.6	19.6
08/03/05	19.9	20.5	19.3
08/04/05	19.9	20.3	19.3
08/05/05	19.9	20.4	19.3
08/06/05	20.0	20.5	19.4
08/07/05	20.0	20.5	19.5
08/08/05	19.9	20.4	19.4
08/09/05	20.0	20.4	19.5
08/10/05	19.9	20.4	19.4
08/11/05	19.8	20.3	19.3
08/12/05	19.7	20.1	19.2
08/13/05	19.5	19.9	19.0

FR2 - Fall River at Pit 1 Forebay Dam

Date	Average	Maximum	Minimum
06/30/05	21.6	23.8	20.1
07/01/05	22.7	24.3	21.2
07/02/05	22.8	23.9	21.6
07/03/05	23.0	24.0	22.2
07/04/05	23.1	24.2	22.1
07/05/05	22.8	24.8	21.2
07/06/05	22.8	24.2	21.6
07/07/05	23.3	24.3	21.8
07/08/05	23.1	24.2	21.8
07/09/05	22.8	23.5	22.0
07/10/05	23.0	24.0	22.2
07/11/05	23.2	24.6	21.9
07/12/05	23.0	25.2	21.8
07/13/05	23.1	24.7	21.7
07/14/05	22.8	24.3	21.9
07/15/05	23.5	26.0	22.0
07/16/05	22.7	23.7	22.1
07/17/05	22.4	23.6	21.7
07/18/05	23.4	25.2	21.9
07/19/05	23.7	25.7	22.1
07/20/05	24.2	26.1	22.5
07/21/05	23.8	24.9	22.8
07/22/05	24.2	25.1	23.3
07/23/05	24.0	25.5	23.0
07/24/05	24.2	25.1	23.2
07/25/05	24.1	25.5	22.9
07/26/05	23.4	24.8	21.9
07/27/05	23.6	25.1	21.5
07/28/05	23.3	24.9	21.6
07/29/05	23.2	24.7	21.5
07/30/05	23.1	25.1	21.8
07/31/05	23.8	25.2	22.6
08/01/05	23.1	24.4	21.3
08/02/05	22.8	24.5	21.4
08/03/05	22.6	24.2	21.3
08/04/05	22.5	25.0	21.4
08/05/05	22.7	25.2	20.9
08/06/05	22.8	25.0	20.7
08/07/05	22.7	24.5	20.9
08/08/05	22.8	24.6	21.2
08/09/05	22.8	24.3	21.2
08/10/05	22.8	24.0	21.5
08/11/05	22.6	24.9	21.4
08/12/05	22.8	24.6	21.0
08/13/05	22.1	24.0	20.7

Appendix C

Daily Summary of Hourly Average Water Temperature

FR1 - Fall River upstream of Pit 1

Diverison

Date	Average	Maximum	Minimum
08/14/05	19.4	19.9	18.9
08/15/05	19.5	19.9	19.0
08/16/05	19.4	19.8	18.9
08/17/05	19.2	19.6	18.7
08/18/05	19.2	19.7	18.8
08/19/05	19.1	19.6	18.5
08/20/05	19.0	19.4	18.4
08/21/05	18.9	19.3	18.4
08/22/05	18.7	19.1	18.2
08/23/05	18.8	19.3	18.3
08/24/05	18.8	19.2	18.3
08/25/05	18.6	18.9	18.2
08/26/05	18.3	18.7	17.9
08/27/05	18.0	18.5	17.4
08/28/05	18.0	18.5	17.4
08/29/05	18.0	18.5	17.4
08/30/05	17.6	18.0	17.0
08/31/05	17.4	17.8	16.9
09/01/05	17.4	17.9	16.9
09/02/05	17.4	17.8	16.9
09/03/05	17.2	17.6	16.8
09/04/05	17.0	17.4	16.6
09/05/05	17.0	17.4	16.5
09/06/05	16.9	17.4	16.5
09/07/05	16.8	17.2	16.4
09/08/05	16.7	17.1	16.4
09/09/05	16.4	16.7	16.1
09/10/05	15.9	16.3	15.6
09/11/05	15.4	15.8	14.9
09/12/05	15.0	15.4	14.5
09/13/05	15.0	15.5	14.5
09/14/05	15.2	15.6	14.7
09/15/05	15.3	15.7	14.8
09/16/05	15.4	15.6	15.1
09/17/05	15.1	15.5	14.7
09/18/05	15.0	15.4	14.6
09/19/05	14.8	15.3	14.3
09/20/05	15.1	15.6	14.6
09/21/05	15.5	15.9	15.2
09/22/05	15.7	16.1	15.4
09/23/05	15.4	15.8	14.7
09/24/05	14.1	14.6	13.7
09/25/05	13.3	13.8	13.0
09/26/05	12.7	13.1	12.4

FR2 - Fall River at Pit 1 Forebay Dam

Date	Average	Maximum	Minimum
08/14/05	22.3	24.1	20.7
08/15/05	21.9	23.2	20.5
08/16/05	21.7	23.6	20.7
08/17/05	22.0	23.6	20.8
08/18/05	21.8	23.0	20.7
08/19/05	21.8	23.3	20.4
08/20/05	21.6	23.2	20.3
08/21/05	21.5	22.9	20.4
08/22/05	21.1	22.9	20.1
08/23/05	21.2	22.4	19.9
08/24/05	21.3	22.5	20.1
08/25/05	21.0	22.1	20.1
08/26/05	20.8	21.7	19.7
08/27/05	20.2	21.3	19.5
08/28/05	19.5	20.6	18.7
08/29/05	19.4	20.2	18.6
08/30/05	19.4	20.1	18.8
08/31/05	19.3	20.1	18.5
09/01/05	19.3	21.0	18.3
09/02/05	19.6	20.7	18.4
09/03/05	19.3	20.4	18.3
09/04/05	19.2	20.2	18.4
09/05/05	19.3	20.4	18.3
09/06/05	19.3	20.5	18.1
09/07/05	19.1	20.4	18.2
09/08/05	18.9	20.0	17.7
09/09/05	18.5	19.1	17.7
09/10/05	18.3	19.4	17.5
09/11/05	18.0	19.3	17.0
09/12/05	17.6	18.5	16.8
09/13/05	17.6	18.8	16.5
09/14/05	17.5	19.1	16.2
09/15/05	17.5	19.0	16.5
09/16/05	17.2	17.8	16.4
09/17/05	17.2	18.3	16.5
09/18/05	17.2	18.1	16.5
09/19/05	17.1	18.6	16.1
09/20/05	16.7	18.2	15.6
09/21/05	16.9	18.2	16.3
09/22/05	17.2	18.3	16.4
09/23/05	16.2	17.1	15.7
09/24/05	15.6	16.3	15.3
09/25/05	15.2	15.5	14.9
09/26/05	14.9	15.5	14.4

Appendix C

Daily Summary of Hourly Average Water Temperature

FR1 - Fall River upstream of Pit 1

Diversion

Date	Average	Maximum	Minimum
09/27/05	13.2	13.7	12.8
09/28/05	13.7	14.2	13.3
09/29/05	14.2	14.7	13.7
09/30/05	14.5	14.8	14.2
10/01/05	14.3	14.6	14.0
10/02/05	13.6	13.9	13.3
10/03/05	13.1	13.4	12.8
10/04/05	12.5	12.8	12.0
10/05/05	12.3	12.6	12.0
10/06/05	12.2	12.6	11.7
10/07/05	12.5	12.9	12.1
10/08/05	12.8	13.2	12.5
10/09/05	12.8	13.1	12.4
10/10/05	12.8	13.2	12.4
10/11/05	12.9	13.2	12.5
10/12/05	13.1	13.5	12.7
10/13/05	13.3	13.6	13.0
10/14/05	13.2	13.5	12.9
10/15/05	12.6	13.0	12.4
10/16/05	12.1	12.4	11.8
10/17/05	12.1	12.5	11.7
10/18/05	12.3	12.6	11.9
10/19/05	12.5	12.7	12.3
10/20/05	12.4	12.8	12.1
10/21/05	12.5	12.8	12.1
10/22/05	12.4	12.7	12.0
10/23/05	12.3	12.6	11.9
10/24/05	12.2	12.4	11.9
10/25/05	12.1	12.3	11.8
10/26/05	12.0	12.2	11.8
10/27/05	11.6	11.8	11.4
10/28/05	11.4	11.5	11.1
10/29/05	11.2	11.5	11.0
10/30/05	11.1	11.3	10.8
10/31/05	11.1	11.3	10.8

FR2 - Fall River at Pit 1 Forebay Dam

Date	Average	Maximum	Minimum
09/27/05	14.8	15.1	14.5
09/28/05	15.8	17.4	14.5
09/29/05	15.2	16.0	14.2
09/30/05	15.6	17.1	14.5
10/01/05	15.3	16.0	14.9
10/02/05	14.9	15.6	14.5
10/03/05	14.5	15.2	14.2
10/04/05	14.2	14.9	13.8
10/05/05	14.0	14.4	13.6
10/06/05	13.5	14.0	13.2
10/07/05	14.0	14.9	13.2
10/08/05	14.3	15.3	13.7
10/09/05	13.9	14.7	13.2
10/10/05	13.8	15.1	13.1
10/11/05	13.7	14.8	13.1
10/12/05	14.1	14.6	13.5
10/13/05	13.9	15.2	13.1
10/14/05	13.8	14.4	13.1
10/15/05	13.3	13.9	13.0
10/16/05	13.4	14.1	12.9
10/17/05	13.6	14.6	13.0
10/18/05	13.5	14.5	12.7
10/19/05	13.2	13.7	12.7
10/20/05	13.3	14.2	12.7
10/21/05	13.4	14.4	12.5
10/22/05	13.1	13.8	12.5
10/23/05	13.0	13.4	12.5
10/24/05	12.8	13.4	12.5
10/25/05	12.9	13.7	12.4
10/26/05	12.6	12.8	12.4
10/27/05	12.4	12.9	12.2
10/28/05	12.3	12.6	12.1
10/29/05	12.5	13.2	12.0
10/30/05	12.3	13.1	11.8
10/31/05	11.8	12.3	11.3

Appendix C

Daily Summary of Hourly Average Water Temperature

FR3 - Fall River at Fall River Pond Weir				FR4 - Fall River near Mouth			
Date	Average	Maximum	Minimum	Date	Average	Maximum	Minimum
05/16/05	15.9	16.3	15.5	05/16/05	15.8	16.2	15.4
05/17/05	15.0	15.5	14.5	05/17/05	15.0	15.5	14.5
05/18/05	14.0	14.5	13.5	05/18/05	13.9	14.4	13.5
05/19/05	13.6	14.4	13.0	05/19/05	13.6	14.3	13.1
05/20/05	13.6	14.6	13.0	05/20/05	13.6	14.5	13.0
05/21/05	14.2	15.4	13.2	05/21/05	14.1	15.4	13.2
05/22/05	15.0	16.5	13.9	05/22/05	15.0	16.5	13.9
05/23/05	16.1	17.9	14.7	05/23/05	16.1	18.0	14.7
05/24/05	17.0	18.2	15.8	05/24/05	16.9	18.1	15.8
05/25/05	17.5	18.8	16.3	05/25/05	17.5	18.8	16.3
05/26/05	18.8	20.0	18.1	05/26/05	19.0	20.3	18.0
05/27/05	18.9	20.4	17.4	05/27/05	19.1	20.7	17.5
05/28/05	19.2	20.2	18.4	05/28/05	19.2	20.3	18.3
05/29/05	19.3	19.6	18.9	05/29/05	19.1	19.6	18.8
05/30/05	19.3	20.5	18.4	05/30/05	19.3	20.9	18.2
05/31/05	19.5	20.5	18.6	05/31/05	19.5	20.6	18.5
06/01/05	19.6	20.2	19.1	06/01/05	19.6	20.3	19.0
06/02/05	19.5	20.2	18.8	06/02/05	19.4	20.3	18.6
06/03/05	19.3	20.4	18.5	06/03/05	19.3	20.5	18.4
06/04/05	18.3	19.1	17.7	06/04/05	18.3	19.2	17.7
06/05/05	17.6	18.1	17.0	06/05/05	17.5	18.0	17.0
06/06/05	17.3	17.7	16.8	06/06/05	17.2	17.7	16.7
06/07/05	16.9	17.5	16.1	06/07/05	16.8	17.5	15.9
06/08/05	16.6	17.0	16.1	06/08/05	16.5	16.9	16.1
06/09/05	16.6	17.5	15.9	06/09/05	16.6	17.6	15.8
06/10/05	17.4	18.8	16.4	06/10/05	17.4	18.8	16.3
06/11/05	17.9	18.9	16.5	06/11/05	17.8	18.9	16.3
06/12/05	18.2	19.2	17.6	06/12/05	18.2	19.1	17.5
06/13/05	18.6	19.7	17.3	06/13/05	18.6	19.7	17.2
06/14/05	18.8	20.2	17.2	06/14/05	18.7	20.0	17.2
06/15/05	19.3	20.1	18.4	06/15/05	19.3	20.1	18.3
06/16/05	18.2	19.3	17.5	06/16/05	18.1	19.2	17.3
06/17/05	17.4	17.8	16.9	06/17/05	17.3	17.9	16.8
06/18/05	17.2	17.7	16.7	06/18/05	17.1	17.7	16.6
06/19/05	17.5	18.5	16.5	06/19/05	17.4	18.5	16.4
06/20/05	18.1	19.2	17.1	06/20/05	18.0	19.1	17.0
06/21/05	18.4	19.4	17.1	06/21/05	18.3	19.3	17.2
06/22/05	18.8	20.0	17.8	06/22/05	18.7	19.9	17.7
06/23/05	19.3	20.6	18.2	06/23/05	19.3	20.5	18.1
06/24/05	19.9	21.0	19.0	06/24/05	19.8	20.9	18.9
06/25/05	20.0	20.7	19.3	06/25/05	20.0	20.7	19.2
06/26/05	20.5	21.3	19.9	06/26/05	20.5	21.2	19.8
06/27/05	20.8	21.6	20.2	06/27/05	20.8	21.5	20.1
06/28/05	21.2	22.3	20.1	06/28/05	21.1	22.2	20.0

Appendix C

Daily Summary of Hourly Average Water Temperature

FR3 - Fall River at Fall River Pond Weir				FR4 - Fall River near Mouth			
Date	Average	Maximum	Minimum	Date	Average	Maximum	Minimum
06/29/05	21.6	23.0	20.2	06/29/05	21.5	22.8	20.0
06/30/05	22.1	23.5	20.5	06/30/05	22.0	23.3	20.4
07/01/05	22.5	23.7	21.2	07/01/05	22.5	23.6	21.0
07/02/05	23.0	24.0	21.7	07/02/05	22.9	23.9	21.6
07/03/05	22.9	23.8	21.9	07/03/05	22.7	23.8	21.7
07/04/05	22.9	23.9	21.8	07/04/05	22.8	23.8	21.6
07/05/05	23.0	24.1	21.7	07/05/05	22.9	24.0	21.6
07/06/05	23.2	24.4	21.8	07/06/05	23.1	24.3	21.7
07/07/05	23.2	24.4	21.9	07/07/05	23.1	24.3	21.8
07/08/05	23.3	24.0	22.3	07/08/05	23.2	23.9	22.3
07/09/05	23.1	23.6	22.5	07/09/05	23.0	23.5	22.4
07/10/05	23.0	23.9	22.3	07/10/05	23.0	23.8	22.1
07/11/05	23.2	24.4	22.3	07/11/05	23.1	24.2	22.2
07/12/05	23.4	24.6	22.1	07/12/05	23.3	24.5	21.9
07/13/05	23.6	24.8	22.3	07/13/05	23.5	24.7	22.3
07/14/05	23.7	24.9	22.6	07/14/05	23.6	24.7	22.4
07/15/05	23.9	24.9	22.6	07/15/05	23.8	24.9	22.5
07/16/05	22.9	24.2	22.2	07/16/05	22.9	24.1	22.2
07/17/05	22.5	23.6	21.6	07/17/05	22.5	23.5	21.6
07/18/05	23.4	24.7	22.3	07/18/05	23.3	24.6	22.2
07/19/05	24.1	25.2	22.7	07/19/05	24.0	25.1	22.6
07/20/05	24.4	25.6	23.1	07/20/05	24.3	25.4	23.0
07/21/05	24.1	24.8	23.3	07/21/05	24.1	24.7	23.2
07/22/05	24.2	24.9	23.4	07/22/05	24.1	24.8	23.3
07/23/05	24.1	25.1	23.0	07/23/05	24.0	24.9	22.9
07/24/05	24.0	24.9	23.0	07/24/05	23.9	24.8	22.8
07/25/05	24.0	24.8	23.1	07/25/05	23.8	24.6	23.0
07/26/05	23.7	24.7	22.2	07/26/05	23.6	24.6	22.1
07/27/05	23.5	24.6	22.1	07/27/05	23.4	24.6	22.0
07/28/05	23.4	24.4	22.2	07/28/05	23.3	24.3	22.1
07/29/05	23.4	24.3	22.1	07/29/05	23.3	24.2	22.1
07/30/05	23.5	24.5	22.2	07/30/05	23.4	24.4	22.2
07/31/05	23.5	24.5	22.5	07/31/05	23.5	24.4	22.3
08/01/05	23.2	24.0	21.8	08/01/05	23.1	23.9	21.8
08/02/05	22.9	23.8	21.8	08/02/05	22.8	23.7	21.7
08/03/05	23.0	24.1	21.6	08/03/05	22.9	23.9	21.5
08/04/05	22.9	23.9	21.8	08/04/05	22.8	23.8	21.7
08/05/05	23.0	24.1	21.6	08/05/05	22.9	24.1	21.5
08/06/05	23.0	24.0	21.6	08/06/05	23.0	24.0	21.5
08/07/05	23.0	23.9	21.7	08/07/05	22.9	23.9	21.6
08/08/05	22.9	23.8	21.8	08/08/05	22.8	23.8	21.7
08/09/05	22.9	23.8	21.8	08/09/05	22.9	23.8	21.7
08/10/05	22.8	23.6	21.9	08/10/05	22.7	23.6	21.8
08/11/05	22.6	23.7	21.6	08/11/05	22.6	23.5	21.4

Appendix C

Daily Summary of Hourly Average Water Temperature

FR3 - Fall River at Fall River Pond Weir				FR4 - Fall River near Mouth			
Date	Average	Maximum	Minimum	Date	Average	Maximum	Minimum
08/12/05	22.7	23.5	21.8	08/12/05	22.6	23.4	21.6
08/13/05	22.5	23.3	21.2	08/13/05	22.4	23.2	21.1
08/14/05	22.3	23.3	20.9	08/14/05	22.2	23.2	20.7
08/15/05	22.3	23.2	21.0	08/15/05	22.2	23.1	20.9
08/16/05	22.2	22.9	21.7	08/16/05	22.2	22.9	21.6
08/17/05	22.2	23.0	21.4	08/17/05	22.1	22.9	21.4
08/18/05	22.0	22.6	21.2	08/18/05	21.9	22.5	21.1
08/19/05	21.8	22.5	21.0	08/19/05	21.7	22.4	20.9
08/20/05	21.8	22.6	20.7	08/20/05	21.7	22.5	20.6
08/21/05	21.7	22.4	20.8	08/21/05	21.6	22.3	20.7
08/22/05	21.5	22.3	20.5	08/22/05	21.4	22.2	20.4
08/23/05	21.7	22.4	20.7	08/23/05	21.6	22.4	20.6
08/24/05	21.4	22.2	20.5	08/24/05	21.3	22.1	20.4
08/25/05	21.1	21.7	20.2	08/25/05	21.0	21.6	20.1
08/26/05	21.0	21.8	20.1	08/26/05	20.9	21.7	20.0
08/27/05	19.8	20.8	19.1	08/27/05	19.8	20.8	19.2
08/28/05	19.2	20.1	18.5	08/28/05	19.2	20.0	18.5
08/29/05	19.6	20.2	18.8	08/29/05	19.5	20.1	18.8
08/30/05	19.4	20.4	18.5	08/30/05	19.3	20.2	18.4
08/31/05	19.4	20.3	18.5	08/31/05	19.3	20.1	18.4
09/01/05	19.5	20.3	18.7	09/01/05	19.4	20.1	18.6
09/02/05	19.6	20.3	18.8	09/02/05	19.5	20.1	18.7
09/03/05	19.5	20.0	18.7	09/03/05	19.4	19.8	18.6
09/04/05	19.3	20.0	18.6	09/04/05	19.3	19.8	18.5
09/05/05	19.2	20.0	18.3	09/05/05	19.1	19.8	18.2
09/06/05	19.2	19.8	18.5	09/06/05	19.2	19.7	18.4
09/07/05	19.2	19.8	18.4	09/07/05	19.1	19.7	18.3
09/08/05	19.0	19.6	18.4	09/08/05	18.9	19.5	18.3
09/09/05	18.7	19.1	18.2	09/09/05	18.6	19.0	18.0
09/10/05	18.1	18.8	17.3	09/10/05	18.0	18.6	17.1
09/11/05	18.1	18.7	17.5	09/11/05	18.0	18.6	17.4
09/12/05	17.5	18.2	16.7	09/12/05	17.4	18.1	16.5
09/13/05	17.5	18.1	16.8	09/13/05	17.4	18.0	16.7
09/14/05	17.9	18.7	17.2	09/14/05	17.7	19.1	16.8
09/15/05	17.6	18.4	16.8	09/15/05	17.5	18.7	16.3
09/16/05	17.3	17.8	16.8	09/16/05	17.2	18.0	16.4
09/17/05	17.0	17.6	16.4	09/17/05	17.0	17.6	16.3
09/18/05	17.3	17.9	16.5	09/18/05	17.2	17.9	16.4
09/19/05	16.9	17.9	16.1	09/19/05	16.9	17.9	15.9
09/20/05	16.6	17.3	15.9	09/20/05	16.6	17.3	15.9
09/21/05	17.2	17.8	16.6	09/21/05	17.2	17.8	16.6
09/22/05	17.2	17.8	16.6	09/22/05	17.2	17.8	16.6
09/23/05	16.3	17.4	15.5	09/23/05	16.2	17.4	15.4
09/24/05	15.5	16.3	14.8	09/24/05	15.4	16.2	14.6

Appendix C

Daily Summary of Hourly Average Water Temperature

FR3 - Fall River at Fall River Pond Weir

Date	Average	Maximum	Minimum
09/25/05	15.4	16.1	14.7
09/26/05	14.6	15.2	14.2
09/27/05	15.4	16.5	14.6
09/28/05	15.5	16.4	14.6
09/29/05	15.7	16.5	15.0
09/30/05	15.5	16.3	14.7
10/01/05	15.4	16.1	14.9
10/02/05	14.7	15.3	14.2
10/03/05	14.6	14.9	14.2
10/04/05	14.1	14.8	13.5
10/05/05	14.2	15.0	13.4
10/06/05	14.0	14.8	13.3
10/07/05	13.8	14.3	13.2
10/08/05	14.3	14.9	13.8
10/09/05	13.9	14.4	13.2
10/10/05	13.8	14.4	13.0
10/11/05	13.9	14.3	13.3
10/12/05	14.1	14.7	13.4
10/13/05	14.0	14.5	13.3
10/14/05	13.9	14.3	13.5
10/15/05	13.1	13.6	12.7
10/16/05	13.3	13.9	12.6
10/17/05	13.6	14.1	12.9
10/18/05	13.4	13.8	12.8
10/19/05	13.3	13.7	13.1
10/20/05	13.1	13.6	12.7
10/21/05	13.1	13.6	12.5
10/22/05	13.2	13.6	12.6
10/23/05	13.0	13.3	12.6
10/24/05	12.8	13.3	12.2
10/25/05	12.8	13.2	12.1
10/26/05	12.6	13.1	12.3
10/27/05	12.3	12.6	12.0
10/28/05	12.3	12.5	11.9
10/29/05	12.3	12.7	11.9
10/30/05	12.2	12.6	11.8
10/31/05	11.8	12.3	11.2

FR4 - Fall River near Mouth

Date	Average	Maximum	Minimum
09/25/05	15.3	16.1	14.5
09/26/05	14.6	15.1	14.0
09/27/05	15.4	16.6	14.5
09/28/05	15.5	16.5	14.4
09/29/05	15.6	16.7	14.6
09/30/05	15.5	16.2	14.7
10/01/05	15.4	16.0	14.9
10/02/05	14.7	15.3	14.1
10/03/05	14.5	14.9	14.1
10/04/05	14.1	14.7	13.4
10/05/05	14.1	15.1	13.1
10/06/05	13.9	15.0	12.9
10/07/05	13.8	14.3	13.1
10/08/05	14.3	15.0	13.7
10/09/05	13.8	14.3	13.1
10/10/05	13.7	14.3	13.0
10/11/05	13.9	14.3	13.3
10/12/05	14.1	14.7	13.4
10/13/05	14.0	14.4	13.2
10/14/05	13.9	14.4	13.4
10/15/05	13.1	13.6	12.6
10/16/05	13.2	13.9	12.5
10/17/05	13.6	14.1	12.9
10/18/05	13.4	13.8	12.8
10/19/05	13.3	13.7	13.0
10/20/05	13.1	13.6	12.6
10/21/05	13.1	13.6	12.5
10/22/05	13.2	13.5	12.6
10/23/05	13.0	13.4	12.5
10/24/05	12.8	13.3	12.2
10/25/05	12.8	13.2	12.1
10/26/05	12.6	13.1	12.2
10/27/05	12.3	12.7	12.0
10/28/05	12.3	12.5	11.9
10/29/05	12.3	12.7	11.9
10/30/05	12.2	12.5	11.7
10/31/05	11.8	12.3	11.2

Appendix C

Daily Summary of Hourly Average Water Temperature

PR1 - Pit River near Pittville				PR2 - Pit River at Big Eddy			
Date	Average	Maximum	Minimum	Date	Average	Maximum	Minimum
05/16/05	16.0	17.4	15.1	05/16/05	17.3	18.8	16.0
05/17/05	14.1	15.0	13.4	05/17/05	14.9	15.9	14.2
05/18/05	12.8	13.4	12.3	05/18/05	13.5	14.1	12.8
05/19/05	12.8	13.7	12.3	05/19/05	12.9	13.2	12.6
05/20/05	13.9	14.8	13.2	05/20/05	13.5	14.1	12.9
05/21/05	15.3	16.4	14.7	05/21/05	14.7	15.5	13.9
05/22/05	17.4	18.2	16.6	05/22/05	16.2	17.4	15.1
05/23/05	<u>Recorder out of water as high</u>			05/23/05	<u>Recorder out of water as high</u>		
05/24/05	<u>flows recede</u>			05/24/05	<u>flows recede</u>		
05/25/05				05/25/05			
05/26/05				05/26/05			
05/27/05				05/27/05			
05/28/05				05/28/05			
05/29/05				05/29/05			
05/30/05				05/30/05			
05/31/05				05/31/05			
06/01/05				06/01/05			
06/02/05				06/02/05			
06/03/05				06/03/05			
06/04/05				06/04/05			
06/05/05				06/05/05			
06/06/05				06/06/05			
06/07/05				06/07/05			
06/08/05	15.9	16.3	15.6	06/08/05	17.2	17.7	16.6
06/09/05	15.9	16.6	15.6	06/09/05	16.8	17.0	16.6
06/10/05	16.5	18.0	15.7	06/10/05	17.0	17.7	16.5
06/11/05	17.7	18.7	16.9	06/11/05	17.4	18.2	17.0
06/12/05	18.3	20.0	16.9	06/12/05	17.8	18.8	17.0
06/13/05	19.1	19.9	18.3	06/13/05	18.4	19.3	17.7
06/14/05	19.7	20.8	19.1	06/14/05	19.1	19.5	18.7
06/15/05	19.9	21.6	19.0	06/15/05	19.6	20.1	19.2
06/16/05	19.3	20.0	18.8	06/16/05	19.4	19.9	18.9
06/17/05	18.6	19.8	17.7	06/17/05	18.5	18.8	18.2
06/18/05	18.0	19.0	17.3	06/18/05	17.9	18.4	17.7
06/19/05	17.4	18.6	16.6	06/19/05	17.9	18.3	17.4
06/20/05	17.4	19.4	16.2	06/20/05	18.3	18.9	17.7
06/21/05	18.5	21.2	17.4	06/21/05	18.6	19.2	18.2
06/22/05	19.0	21.8	17.4	06/22/05	18.9	19.8	18.2
06/23/05	19.8	22.8	18.3	06/23/05	19.2	20.0	18.5
06/24/05	20.6	24.1	19.2	06/24/05	19.4	20.2	18.9
06/25/05	20.9	24.1	19.2	06/25/05	19.7	20.5	19.3
06/26/05	20.7	24.2	18.7	06/26/05	20.3	20.7	19.8
06/27/05	20.7	24.5	18.8	06/27/05	21.0	21.5	20.6
06/28/05	21.9	25.4	19.9	06/28/05	21.3	22.6	20.6

Appendix C

Daily Summary of Hourly Average Water Temperature

PR1 - Pit River near Pittville				PR2 - Pit River at Big Eddy			
Date	Average	Maximum	Minimum	Date	Average	Maximum	Minimum
06/29/05	22.3	26.3	20.3	06/29/05	21.7	23.2	20.7
06/30/05	22.5	26.4	20.7	06/30/05	22.1	23.4	21.2
07/01/05	22.8	26.6	21.4	07/01/05	22.4	23.2	21.7
07/02/05	23.1	26.4	21.1	07/02/05	22.7	23.5	22.1
07/03/05	22.1	26.3	18.8	07/03/05	22.9	23.9	22.2
07/04/05	22.1	26.7	18.4	07/04/05	23.2	24.5	22.4
07/05/05	22.3	27.4	19.0	07/05/05	23.2	24.4	22.5
07/06/05	23.8	27.5	22.0	07/06/05	23.2	23.8	22.5
07/07/05	24.1	27.6	22.6	07/07/05	23.3	23.8	22.8
07/08/05	23.7	26.9	22.1	07/08/05	23.3	23.9	22.8
07/09/05	23.4	25.8	21.4	07/09/05	23.3	23.7	23.0
07/10/05	23.1	26.8	20.7	07/10/05	23.4	23.7	23.1
07/11/05	21.1	26.0	19.0	07/11/05	23.5	24.3	22.9
07/12/05	24.9	27.4	23.3	07/12/05	23.9	24.5	23.4
07/13/05	24.1	27.7	21.9	07/13/05	23.7	24.8	22.9
07/14/05	24.3	27.8	22.4	07/14/05	23.9	24.9	23.1
07/15/05	24.7	28.2	23.0	07/15/05	24.1	24.9	23.5
07/16/05	24.8	28.2	22.5	07/16/05	23.6	24.3	23.2
07/17/05	24.5	28.8	21.3	07/17/05	22.9	23.4	22.5
07/18/05	24.4	28.8	21.2	07/18/05	23.6	25.4	22.5
07/19/05	24.9	29.0	22.5	07/19/05	24.4	25.0	23.6
07/20/05	25.5	29.1	23.4	07/20/05	24.7	25.3	24.0
07/21/05	25.1	27.3	23.5	07/21/05	24.5	25.1	24.1
07/22/05	25.1	27.6	23.8	07/22/05	24.4	24.8	23.9
07/23/05	24.5	27.8	22.2	07/23/05	24.3	25.0	23.7
07/24/05	23.8	27.6	20.9	07/24/05	24.2	24.9	23.6
07/25/05	22.9	27.3	19.4	07/25/05	24.5	25.7	23.4
07/26/05	23.9	27.5	21.2	07/26/05	24.0	25.4	23.0
07/27/05	24.3	27.6	22.1	07/27/05	23.8	24.6	23.1
07/28/05	24.1	27.1	22.1	07/28/05	23.8	24.4	23.3
07/29/05	24.0	27.2	21.9	07/29/05	23.7	24.2	23.1
07/30/05	24.3	27.3	22.2	07/30/05	23.7	24.2	23.2
07/31/05	24.0	27.6	21.6	07/31/05	23.8	24.5	23.3
08/01/05	22.7	26.5	19.6	08/01/05	23.6	24.1	23.1
08/02/05	22.7	26.8	19.6	08/02/05	23.5	24.4	23.0
08/03/05	22.8	27.1	19.6	08/03/05	23.3	24.3	22.7
08/04/05	22.9	27.1	19.7	08/04/05	23.1	23.7	22.6
08/05/05	23.0	27.2	19.6	08/05/05	23.2	23.8	22.6
08/06/05	23.1	27.0	19.6	08/06/05	23.1	23.8	22.5
08/07/05	22.6	26.6	19.2	08/07/05	23.1	23.8	22.6
08/08/05	22.6	26.3	19.2	08/08/05	23.0	23.7	22.6
08/09/05	22.8	26.4	19.2	08/09/05	23.0	23.5	22.6
08/10/05	22.4	26.1	18.8	08/10/05	22.9	23.4	22.5
08/11/05	22.1	26.3	18.2	08/11/05	23.0	24.0	22.2

Appendix C

Daily Summary of Hourly Average Water Temperature

PR1 - Pit River near Pittville				PR2 - Pit River at Big Eddy			
Date	Average	Maximum	Minimum	Date	Average	Maximum	Minimum
08/12/05	22.0	25.7	18.3	08/12/05	22.6	24.0	21.8
08/13/05	21.9	25.7	18.1	08/13/05	22.6	23.5	21.7
08/14/05	22.0	26.1	18.2	08/14/05	22.3	23.5	21.6
08/15/05	22.0	25.3	18.7	08/15/05	22.3	22.6	21.8
08/16/05	22.3	26.5	18.6	08/16/05	22.3	23.1	21.9
08/17/05	22.4	26.2	18.6	08/17/05	22.2	22.6	21.9
08/18/05	22.2	25.8	18.6	08/18/05	22.1	22.5	21.8
08/19/05	21.7	26.0	17.7	08/19/05	22.0	22.4	21.5
08/20/05	21.6	25.7	17.7	08/20/05	21.7	22.2	21.2
08/21/05	21.6	25.7	17.7	08/21/05	21.7	22.4	21.2
08/22/05	21.5	25.9	17.3	08/22/05	21.7	22.7	21.1
08/23/05	21.8	25.7	18.1	08/23/05	21.5	22.1	21.0
08/24/05	21.5	25.3	17.8	08/24/05	21.5	21.9	21.1
08/25/05	20.9	24.8	16.9	08/25/05	21.4	21.8	20.9
08/26/05	20.6	24.7	16.6	08/26/05	21.1	21.6	20.6
08/27/05	19.8	24.1	16.4	08/27/05	20.4	21.0	20.1
08/28/05	20.2	24.6	16.6	08/28/05	19.5	20.1	19.1
08/29/05	20.5	24.3	17.0	08/29/05	19.8	20.9	19.2
08/30/05	19.4	23.4	15.6	08/30/05	19.9	20.7	19.2
08/31/05	19.7	24.1	15.4	08/31/05	19.7	20.7	18.9
09/01/05	20.1	24.1	16.1	09/01/05	19.5	20.2	18.8
09/02/05	20.0	23.8	16.3	09/02/05	19.7	20.1	19.2
09/03/05	19.4	23.0	15.8	09/03/05	19.5	19.9	19.1
09/04/05	19.4	23.3	16.2	09/04/05	19.4	19.7	19.1
09/05/05	19.2	23.2	15.4	09/05/05	19.2	19.7	18.8
09/06/05	19.2	23.0	15.6	09/06/05	19.1	19.5	18.6
09/07/05	19.1	23.1	15.3	09/07/05	19.1	20.1	18.5
09/08/05	18.9	22.3	16.0	09/08/05	18.9	19.3	18.6
09/09/05	18.0	21.3	15.5	09/09/05	18.8	19.0	18.5
09/10/05	16.9	20.6	13.5	09/10/05	18.4	18.9	18.1
09/11/05	17.0	20.5	13.8	09/11/05	17.9	18.5	17.5
09/12/05	16.6	20.1	13.4	09/12/05	17.7	18.5	17.3
09/13/05	16.7	20.4	13.3	09/13/05	17.5	18.4	16.9
09/14/05	16.9	20.4	13.7	09/14/05	17.1	18.0	16.6
09/15/05	17.1	20.7	13.9	09/15/05	17.3	18.0	16.8
09/16/05	16.5	18.9	14.3	09/16/05	17.1	17.5	16.8
09/17/05	16.3	19.3	13.8	09/17/05	16.9	17.3	16.6
09/18/05	16.3	19.7	13.2	09/18/05	16.6	17.6	15.9
09/19/05	16.7	20.4	13.4	09/19/05	16.6	17.5	15.9
09/20/05	16.9	20.1	13.8	09/20/05	16.9	17.7	16.4
09/21/05	18.1	21.1	15.5	09/21/05	17.1	17.6	16.7
09/22/05	17.3	20.4	14.5	09/22/05	17.0	17.4	16.7
09/23/05	15.1	17.3	14.0	09/23/05	16.7	17.3	16.2
09/24/05	14.1	17.3	11.5	09/24/05	16.0	16.4	15.5

Appendix C

Daily Summary of Hourly Average Water Temperature

PR1 - Pit River near Pittville				PR2 - Pit River at Big Eddy			
Date	Average	Maximum	Minimum	Date	Average	Maximum	Minimum
09/25/05	14.7	17.9	11.8	09/25/05	15.3	16.0	14.8
09/26/05	14.5	16.2	12.8	09/26/05	15.0	15.3	14.7
09/27/05	16.6	19.8	14.4	09/27/05	15.2	15.8	14.9
09/28/05	16.3	19.4	13.4	09/28/05	15.4	16.5	14.7
09/29/05	15.7	19.0	12.6	09/29/05	15.3	16.4	14.4
09/30/05	15.5	18.3	12.6	09/30/05	15.0	15.7	14.5
10/01/05	15.0	15.8	13.7	10/01/05	15.1	15.4	15.0
10/02/05	14.2	16.3	12.1	10/02/05	14.8	15.2	14.6
10/03/05	14.2	16.3	12.8	10/03/05	14.5	14.7	14.3
10/04/05	13.8	16.3	11.8	10/04/05	14.3	14.8	13.9
10/05/05	14.4	17.0	12.1	10/05/05	14.0	14.7	13.4
10/06/05	14.5	17.2	12.3	10/06/05	13.7	14.6	13.1
10/07/05	14.1	16.6	12.2	10/07/05	13.7	14.2	13.3
10/08/05	14.4	17.1	12.6	10/08/05	13.7	14.3	13.3
10/09/05	13.4	16.1	10.8	10/09/05	13.8	14.5	13.3
10/10/05	14.1	17.0	11.6	10/10/05	13.5	14.2	13.0
10/11/05	14.0	16.5	12.2	10/11/05	13.5	14.2	13.0
10/12/05	13.9	16.9	11.6	10/12/05	13.6	14.2	13.0
10/13/05	13.8	16.9	11.5	10/13/05	13.5	14.2	13.0
10/14/05	13.6	16.2	11.4	10/14/05	13.6	14.2	13.2
10/15/05	13.3	15.0	12.4	10/15/05	13.4	13.6	13.2
10/16/05	13.2	16.0	11.2	10/16/05	13.2	13.7	12.9
10/17/05	13.3	15.9	11.6	10/17/05	13.0	13.7	12.4
10/18/05	13.6	15.5	12.4	10/18/05	13.0	13.6	12.6
10/19/05	13.2	14.0	12.5	10/19/05	13.1	13.3	12.9
10/20/05	13.4	15.0	12.7	10/20/05	13.1	13.6	12.9
10/21/05	13.1	15.3	11.8	10/21/05	12.8	13.5	12.4
10/22/05	13.3	15.3	12.1	10/22/05	12.7	13.3	12.3
10/23/05	13.0	15.0	11.8	10/23/05	12.7	13.1	12.4
10/24/05	13.2	14.8	12.1	10/24/05	12.7	13.2	12.4
10/25/05	13.0	14.7	11.8	10/25/05	12.4	12.7	12.1
10/26/05	13.1	13.5	12.9	10/26/05	12.5	12.6	12.3
10/27/05	12.9	14.0	12.5	10/27/05	12.2	12.4	12.1
10/28/05	12.9	13.7	12.5	10/28/05	12.1	12.2	11.9
10/29/05	12.8	14.1	11.9	10/29/05	12.0	12.2	11.9
10/30/05	11.9	13.3	11.0	10/30/05	11.9	12.3	11.6
10/31/05	11.8	13.4	10.8	10/31/05	11.7	12.2	11.4

Appendix C

Daily Summary of Hourly Average Water Temperature

PR3 - Pit River near Pit Falls				PR4 - Pit River at Pit 1 Footbridge			
Date	Average	Maximum	Minimum	Date	Average	Maximum	Minimum
05/16/05	17.4	18.8	16.1	05/16/05	17.4	18.8	16.2
05/17/05	15.0	15.9	14.3	05/17/05	15.0	16.0	14.3
05/18/05	13.5	14.2	12.9	05/18/05	13.6	14.2	13.0
05/19/05	13.0	13.4	12.6	05/19/05	13.1	13.5	12.7
05/20/05	13.7	14.4	12.9	05/20/05	13.8	14.5	13.0
05/21/05	15.0	15.9	14.0	05/21/05	15.1	16.0	14.1
05/22/05	16.7	18.0	15.4	05/22/05	16.7	18.0	15.4
05/23/05	17.8	18.6	17.1	05/23/05	17.8	18.6	17.1
05/24/05	17.9	18.9	17.2	05/24/05	18.0	18.9	17.2
05/25/05	18.7	19.5	18.1	05/25/05	18.7	19.5	18.1
05/26/05	19.8	20.5	19.1	05/26/05	19.8	20.5	19.0
05/27/05	21.0	21.7	20.4	05/27/05	21.0	21.7	20.2
05/28/05	21.5	21.9	21.2	05/28/05	21.3	21.8	20.8
05/29/05	20.4	21.1	20.0	05/29/05	20.2	20.8	19.8
05/30/05	20.1	20.9	19.4	05/30/05	20.0	21.0	19.2
05/31/05	19.7	20.2	18.9	05/31/05	19.6	20.1	18.8
06/01/05	19.8	20.8	19.0	06/01/05	19.7	20.8	18.8
06/02/05	19.8	20.4	19.1	06/02/05	19.6	20.4	18.8
06/03/05	19.5	20.2	18.7	06/03/05	19.4	20.2	18.5
06/04/05	19.0	19.8	18.5	06/04/05	18.9	19.6	18.4
06/05/05	18.2	18.8	17.7	06/05/05	18.1	18.7	17.6
06/06/05	18.3	18.6	17.8	06/06/05	18.1	18.6	17.6
06/07/05	17.9	18.5	17.5	06/07/05	17.7	18.5	17.3
06/08/05	17.2	17.5	16.6	06/08/05	17.1	17.3	16.5
06/09/05	17.0	17.9	16.5	06/09/05	16.9	18.0	16.4
06/10/05	17.2	18.4	16.5	06/10/05	17.2	18.5	16.3
06/11/05	17.5	18.7	16.9	06/11/05	17.4	18.8	16.7
06/12/05	17.7	19.2	16.5	06/12/05	17.5	19.2	16.1
06/13/05	18.3	19.6	17.2	06/13/05	18.1	19.7	16.9
06/14/05	18.9	19.9	18.1	06/14/05	18.7	19.9	17.7
06/15/05	19.4	20.7	18.5	06/15/05	19.1	20.5	18.1
06/16/05	18.8	19.6	18.4	06/16/05	18.3	19.3	17.9
06/17/05	18.2	18.9	17.7	06/17/05	17.8	18.3	17.3
06/18/05	17.8	18.3	17.3	06/18/05	17.4	17.9	17.0
06/19/05	17.8	19.0	17.0	06/19/05	17.6	19.0	16.6
06/20/05	18.2	19.7	17.2	06/20/05	17.9	19.6	16.7
06/21/05	18.5	19.8	17.6	06/21/05	18.2	19.6	17.2
06/22/05	18.8	20.3	17.6	06/22/05	18.5	20.1	17.2
06/23/05	19.0	20.7	17.9	06/23/05	18.8	20.4	17.4
06/24/05	19.3	20.8	18.3	06/24/05	19.0	20.5	17.8
06/25/05	19.4	20.7	18.6	06/25/05	19.0	20.2	18.1
06/26/05	19.7	21.1	18.9	06/26/05	19.1	20.6	18.3
06/27/05	20.0	21.3	19.1	06/27/05	19.3	20.6	18.3
06/28/05	20.7	22.1	19.6	06/28/05	20.2	21.6	19.0

Appendix C

Daily Summary of Hourly Average Water Temperature

PR3 - Pit River near Pit Falls				PR4 - Pit River at Pit 1 Footbridge			
Date	Average	Maximum	Minimum	Date	Average	Maximum	Minimum
06/29/05	21.0	22.6	19.6	06/29/05	20.4	22.0	19.0
06/30/05	21.3	23.1	19.9	06/30/05	20.8	22.4	19.3
07/01/05	21.7	23.1	20.5	07/01/05	21.1	22.3	19.9
07/02/05	21.9	23.2	20.9	07/02/05	21.3	22.5	20.2
07/03/05	21.4	23.0	20.2	07/03/05	20.5	22.2	19.1
07/04/05	21.6	23.2	20.3	07/04/05	20.6	22.4	19.2
07/05/05	21.7	23.4	20.5	07/05/05	20.8	22.6	19.3
07/06/05	22.2	23.5	21.1	07/06/05	21.5	22.8	20.3
07/07/05	22.4	23.6	21.5	07/07/05	21.7	22.9	20.8
07/08/05	22.3	23.4	21.5	07/08/05	21.7	22.7	20.8
07/09/05	22.2	22.9	21.3	07/09/05	21.5	22.2	20.5
07/10/05	21.9	23.3	21.2	07/10/05	20.9	22.5	20.1
07/11/05	21.9	23.6	20.8	07/11/05	20.9	22.7	19.6
07/12/05	22.4	23.9	21.3	07/12/05	21.6	23.2	20.5
07/13/05	22.6	23.9	21.4	07/13/05	21.9	23.3	20.6
07/14/05	22.7	24.1	21.4	07/14/05	22.0	23.4	20.7
07/15/05	23.0	24.2	21.9	07/15/05	22.2	23.5	21.1
07/16/05	23.3	23.9	22.8	07/16/05	23.0	24.0	22.3
07/17/05	22.6	23.1	21.9	07/17/05	22.4	23.2	21.5
07/18/05	22.1	23.8	20.7	07/18/05	21.3	22.9	19.8
07/19/05	22.8	24.2	21.8	07/19/05	21.9	23.4	20.9
07/20/05	23.1	24.5	22.2	07/20/05	22.3	23.7	21.4
07/21/05	22.9	23.6	22.2	07/21/05	21.9	22.7	21.3
07/22/05	22.9	23.9	22.2	07/22/05	22.1	23.1	21.4
07/23/05	22.8	24.2	21.7	07/23/05	21.9	23.5	20.8
07/24/05	22.3	23.8	21.3	07/24/05	21.3	22.9	20.1
07/25/05	22.2	23.8	20.9	07/25/05	21.1	22.8	19.7
07/26/05	22.2	23.8	20.7	07/26/05	21.2	23.0	19.6
07/27/05	22.4	23.8	21.3	07/27/05	21.6	23.0	20.4
07/28/05	22.4	23.6	21.5	07/28/05	21.6	22.8	20.7
07/29/05	22.2	23.6	21.3	07/29/05	21.4	22.9	20.4
07/30/05	22.4	23.8	21.5	07/30/05	21.6	23.1	20.6
07/31/05	22.2	23.6	21.4	07/31/05	21.3	22.7	20.3
08/01/05	21.8	23.2	20.9	08/01/05	20.8	22.3	19.8
08/02/05	21.8	23.3	20.9	08/02/05	20.8	22.5	19.7
08/03/05	21.6	23.3	20.5	08/03/05	20.7	22.5	19.4
08/04/05	21.5	23.2	20.5	08/04/05	20.6	22.4	19.4
08/05/05	21.7	23.3	20.6	08/05/05	20.8	22.6	19.6
08/06/05	21.8	23.1	20.7	08/06/05	21.0	22.5	19.8
08/07/05	21.7	23.2	20.7	08/07/05	20.8	22.4	19.7
08/08/05	21.7	23.1	20.8	08/08/05	20.8	22.4	19.8
08/09/05	21.6	23.1	20.7	08/09/05	20.7	22.3	19.6
08/10/05	21.5	23.1	20.7	08/10/05	20.7	22.3	19.7
08/11/05	21.5	23.0	20.4	08/11/05	20.7	22.4	19.4

Appendix C

Daily Summary of Hourly Average Water Temperature

PR3 - Pit River near Pit Falls				PR4 - Pit River at Pit 1 Footbridge			
Date	Average	Maximum	Minimum	Date	Average	Maximum	Minimum
08/12/05	21.3	22.7	20.1	08/12/05	20.5	22.0	19.1
08/13/05	21.3	22.7	20.0	08/13/05	20.5	22.1	19.1
08/14/05	21.2	22.7	20.0	08/14/05	20.5	22.1	19.2
08/15/05	21.2	22.5	20.4	08/15/05	20.5	21.8	19.5
08/16/05	21.3	22.7	20.5	08/16/05	20.5	22.1	19.6
08/17/05	21.2	22.5	20.5	08/17/05	20.5	21.9	19.6
08/18/05	21.0	22.4	20.4	08/18/05	20.3	21.7	19.5
08/19/05	20.9	22.4	20.1	08/19/05	20.2	21.8	19.2
08/20/05	20.7	22.1	19.8	08/20/05	20.0	21.5	18.9
08/21/05	20.6	22.0	19.7	08/21/05	19.9	21.5	18.8
08/22/05	20.6	22.1	19.5	08/22/05	19.8	21.6	18.6
08/23/05	20.6	21.9	19.6	08/23/05	19.9	21.3	18.8
08/24/05	20.5	21.8	19.7	08/24/05	19.8	21.3	18.9
08/25/05	20.4	21.7	19.5	08/25/05	19.7	21.1	18.7
08/26/05	20.2	21.6	19.2	08/26/05	19.6	21.0	18.4
08/27/05	20.2	21.1	19.8	08/27/05	20.0	21.1	19.3
08/28/05	19.4	19.9	18.9	08/28/05	19.3	20.0	18.7
08/29/05	19.2	20.4	18.3	08/29/05	18.7	20.0	17.7
08/30/05	19.1	20.4	18.1	08/30/05	18.5	20.0	17.3
08/31/05	19.0	20.4	17.8	08/31/05	18.5	20.1	17.1
09/01/05	19.0	20.4	17.9	09/01/05	18.5	20.1	17.2
09/02/05	19.1	20.4	18.3	09/02/05	18.5	20.0	17.6
09/03/05	19.0	20.2	18.1	09/03/05	18.4	19.8	17.4
09/04/05	18.9	20.1	18.3	09/04/05	18.4	19.7	17.6
09/05/05	18.8	20.1	17.9	09/05/05	18.2	19.8	17.2
09/06/05	18.6	19.9	17.8	09/06/05	18.1	19.5	17.1
09/07/05	18.6	20.0	17.7	09/07/05	18.1	19.7	16.9
09/08/05	18.5	19.7	17.8	09/08/05	18.0	19.3	17.2
09/09/05	18.4	19.5	17.9	09/09/05	17.8	18.9	17.2
09/10/05	18.0	19.1	17.2	09/10/05	17.4	18.7	16.6
09/11/05	17.7	18.8	16.9	09/11/05	17.2	18.5	16.4
09/12/05	17.4	18.6	16.6	09/12/05	16.9	18.4	16.0
09/13/05	17.4	18.6	16.4	09/13/05	16.9	18.4	15.8
09/14/05	17.2	18.5	16.1	09/14/05	16.7	18.0	15.5
09/15/05	17.2	18.7	16.3	09/15/05	16.7	18.2	15.6
09/16/05	17.0	17.8	16.4	09/16/05	16.5	17.2	15.7
09/17/05	16.9	17.8	16.2	09/17/05	16.5	17.5	15.7
09/18/05	16.7	17.8	15.6	09/18/05	16.3	17.7	15.2
09/19/05	16.7	18.0	15.6	09/19/05	16.4	17.9	15.1
09/20/05	17.0	18.3	16.0	09/20/05	16.8	18.1	15.6
09/21/05	17.3	18.4	16.6	09/21/05	17.0	18.2	16.2
09/22/05	17.1	18.3	16.4	09/22/05	16.8	18.1	16.0
09/23/05	16.5	16.8	16.1	09/23/05	16.1	16.5	15.7
09/24/05	16.0	17.0	15.2	09/24/05	15.6	16.8	14.7

Appendix C

Daily Summary of Hourly Average Water Temperature

PR3 - Pit River near Pit Falls				PR4 - Pit River at Pit 1 Footbridge			
Date	Average	Maximum	Minimum	Date	Average	Maximum	Minimum
09/25/05	15.6	16.7	14.6	09/25/05	15.3	16.6	14.2
09/26/05	15.4	16.1	14.7	09/26/05	15.1	15.8	14.4
09/27/05	16.1	17.1	15.5	09/27/05	15.8	17.0	15.1
09/28/05	15.9	17.0	14.9	09/28/05	15.6	16.8	14.5
09/29/05	15.8	17.0	14.6	09/29/05	15.4	16.7	14.2
09/30/05	15.5	16.5	14.6	09/30/05	15.4	16.4	14.3
10/01/05	15.5	15.9	15.3	10/01/05	15.3	15.6	15.0
10/02/05	15.2	16.0	14.5	10/02/05	14.9	15.9	14.2
10/03/05	15.0	15.6	14.5	10/03/05	14.8	15.4	14.3
10/04/05	14.7	15.6	14.1	10/04/05	14.5	15.5	13.8
10/05/05	14.5	15.6	13.5	10/05/05	14.3	15.5	13.3
10/06/05	14.5	15.7	13.5	10/06/05	14.3	15.5	13.2
10/07/05	14.5	15.4	13.7	10/07/05	14.4	15.3	13.5
10/08/05	14.5	15.4	14.0	10/08/05	14.4	15.3	13.9
10/09/05	14.3	15.2	13.6	10/09/05	14.2	15.2	13.3
10/10/05	14.2	15.3	13.3	10/10/05	14.1	15.2	13.1
10/11/05	14.3	15.0	13.7	10/11/05	14.2	15.1	13.6
10/12/05	14.3	15.2	13.5	10/12/05	14.2	15.2	13.3
10/13/05	14.3	15.3	13.5	10/13/05	14.2	15.2	13.3
10/14/05	14.3	15.2	13.7	10/14/05	14.2	15.2	13.5
10/15/05	14.1	14.8	13.8	10/15/05	14.0	14.7	13.6
10/16/05	14.0	14.9	13.3	10/16/05	13.9	14.9	13.1
10/17/05	13.8	14.8	13.0	10/17/05	13.8	14.8	12.9
10/18/05	13.8	14.7	13.1	10/18/05	13.8	14.6	13.0
10/19/05	13.9	14.2	13.6	10/19/05	13.9	14.2	13.6
10/20/05	13.9	14.7	13.6	10/20/05	13.9	14.7	13.4
10/21/05	13.6	14.6	12.8	10/21/05	13.5	14.5	12.7
10/22/05	13.6	14.5	12.9	10/22/05	13.6	14.5	12.7
10/23/05	13.6	14.4	13.0	10/23/05	13.5	14.4	12.8
10/24/05	13.6	14.4	13.1	10/24/05	13.6	14.4	12.9
10/25/05	13.4	14.2	12.8	10/25/05	13.4	14.1	12.6
10/26/05	13.4	13.6	13.1	10/26/05	13.4	13.6	13.1
10/27/05	13.1	13.6	12.9	10/27/05	13.1	13.5	12.8
10/28/05	13.0	13.5	12.8	10/28/05	13.0	13.5	12.8
10/29/05	13.0	13.5	12.8	10/29/05	13.0	13.5	12.8
10/30/05	12.7	13.4	12.2	10/30/05	12.7	13.4	12.0
10/31/05	12.7	13.4	12.1	10/31/05	12.7	13.4	12.1

Appendix C

Daily Summary of Hourly Average Water Temperature

PR5 - Pit River downstream of Pit 1 Powerhouse

Date	Average	Maximum	Minimum
05/16/05	16.3	17.1	15.5
05/17/05	14.5	15.3	13.8
05/18/05	13.1	13.7	12.7
05/19/05	12.8	13.2	12.5
05/20/05	13.5	14.3	12.6
05/21/05	14.8	15.6	14.0
05/22/05	16.2	17.8	15.2
05/23/05	17.1	17.9	16.5
05/24/05	17.3	18.0	16.6
05/25/05	17.9	18.6	17.3
05/26/05	18.7	19.5	17.7
05/27/05	19.5	20.4	18.7
05/28/05	19.7	20.2	19.2
05/29/05	18.5	19.3	18.1
05/30/05	18.1	18.9	17.3
05/31/05	18.1	18.7	17.5
06/01/05	18.2	19.0	17.5
06/02/05	18.0	18.7	17.2
06/03/05	17.9	18.8	17.0
06/04/05	18.8	19.2	18.3
06/05/05	17.9	18.6	17.1
06/06/05	16.8	17.1	16.4
06/07/05	15.8	16.3	15.2
06/08/05	15.1	15.5	14.8
06/09/05	15.2	15.8	14.5
06/10/05	15.9	16.8	15.0
06/11/05	16.7	17.7	15.9
06/12/05	16.9	18.0	16.0
06/13/05	17.5	18.5	16.5
06/14/05	17.9	18.8	17.0
06/15/05	18.2	18.9	17.4
06/16/05	17.5	18.5	17.0
06/17/05	16.3	16.9	15.9
06/18/05	15.4	16.3	14.9
06/19/05	15.5	16.4	14.6
06/20/05	16.4	17.6	15.4
06/21/05	17.3	18.2	16.5
06/22/05	17.8	18.7	16.9
06/23/05	18.3	19.3	17.3
06/24/05	18.7	19.6	17.9
06/25/05	18.8	19.4	18.1
06/26/05	19.0	19.7	18.3

Appendix C

Daily Summary of Hourly Average Water Temperature

PR5 - Pit River downstream of Pit 1 Powerhouse

Date	Average	Maximum	Minimum
06/27/05	19.1	19.8	18.6
06/28/05	19.5	20.5	18.6
06/29/05	19.9	20.8	18.9
06/30/05	20.2	21.1	19.4
07/01/05	20.7	21.4	20.0
07/02/05	20.7	21.2	20.0
07/03/05	20.4	21.1	19.6
07/04/05	20.4	21.1	19.6
07/05/05	20.5	21.3	19.7
07/06/05	20.7	21.4	20.1
07/07/05	20.9	21.4	20.2
07/08/05	20.9	21.4	20.3
07/09/05	20.8	21.1	20.3
07/10/05	20.2	20.7	19.7
07/11/05	20.1	20.9	19.3
07/12/05	20.6	21.5	19.8
07/13/05	20.9	21.6	20.2
07/14/05	21.1	21.7	20.3
07/15/05	21.3	21.9	20.6
07/16/05	22.8	24.0	21.8
07/17/05	22.3	23.3	21.7
07/18/05	21.6	22.4	20.8
07/19/05	21.9	22.5	21.3
07/20/05	21.9	22.5	21.3
07/21/05	21.4	21.9	21.0
07/22/05	21.1	21.4	20.6
07/23/05	20.7	21.3	20.0
07/24/05	20.5	21.2	19.7
07/25/05	20.5	21.3	19.7
07/26/05	20.5	21.3	19.6
07/27/05	20.7	21.4	20.0
07/28/05	20.7	21.2	20.1
07/29/05	20.4	21.1	19.8
07/30/05	20.6	21.4	20.0
07/31/05	20.8	21.5	20.1
08/01/05	20.6	21.2	20.0
08/02/05	20.4	21.1	19.7
08/03/05	20.1	20.9	19.4
08/04/05	20.1	20.8	19.4
08/05/05	20.1	20.8	19.4
08/06/05	20.2	20.9	19.6
08/07/05	20.2	20.9	19.6

Appendix C

Daily Summary of Hourly Average Water Temperature

PR5 - Pit River downstream of Pit 1 Powerhouse

Date	Average	Maximum	Minimum
08/08/05	20.2	20.8	19.6
08/09/05	20.2	20.8	19.5
08/10/05	20.1	20.8	19.5
08/11/05	20.0	20.7	19.3
08/12/05	19.9	20.6	19.2
08/13/05	19.8	20.5	19.0
08/14/05	19.7	20.5	19.0
08/15/05	19.7	20.4	19.1
08/16/05	19.7	20.3	19.1
08/17/05	19.5	20.1	19.0
08/18/05	19.5	20.1	19.0
08/19/05	19.4	20.0	18.7
08/20/05	19.2	19.8	18.6
08/21/05	19.1	19.7	18.5
08/22/05	19.0	19.7	18.3
08/23/05	19.1	19.7	18.5
08/24/05	19.0	19.6	18.5
08/25/05	18.9	19.4	18.3
08/26/05	18.7	19.3	18.0
08/27/05	19.7	21.2	18.7
08/28/05	19.1	20.1	18.5
08/29/05	18.2	18.8	17.6
08/30/05	17.8	18.5	17.2
08/31/05	17.8	18.6	17.0
09/01/05	17.7	18.4	17.0
09/02/05	17.7	18.3	17.1
09/03/05	17.5	18.1	17.0
09/04/05	17.4	18.0	16.8
09/05/05	17.3	17.9	16.7
09/06/05	17.3	17.9	16.7
09/07/05	17.2	17.9	16.6
09/08/05	17.1	17.6	16.7
09/09/05	16.8	17.2	16.4
09/10/05	16.3	16.8	15.8
09/11/05	15.8	16.4	15.3
09/12/05	15.5	16.1	14.9
09/13/05	15.4	16.1	14.8
09/14/05	15.5	16.0	14.9
09/15/05	15.7	16.2	15.0
09/16/05	15.6	16.0	15.2
09/17/05	15.4	15.9	15.0
09/18/05	15.3	15.9	14.7

Appendix C

Daily Summary of Hourly Average Water Temperature

PR5 - Pit River downstream of Pit 1 Powerhouse

Date	Average	Maximum	Minimum
09/19/05	15.7	17.7	14.6
09/20/05	15.6	16.1	14.9
09/21/05	15.9	16.5	15.5
09/22/05	16.0	16.7	15.5
09/23/05	15.5	16.1	14.9
09/24/05	14.5	14.9	14.0
09/25/05	13.9	14.3	13.4
09/26/05	13.3	13.7	13.0
09/27/05	13.8	14.4	13.3
09/28/05	14.2	14.8	13.6
09/29/05	14.4	15.1	13.8
09/30/05	14.7	15.2	14.2
10/01/05	14.6	14.9	14.3
10/02/05	14.0	14.3	13.6
10/03/05	13.6	13.9	13.3
10/04/05	13.0	13.3	12.6
10/05/05	12.8	13.2	12.4
10/06/05	12.7	13.2	12.1
10/07/05	13.0	13.4	12.4
10/08/05	13.3	13.7	12.9
10/09/05	13.2	13.6	12.7
10/10/05	13.2	13.7	12.7
10/11/05	13.3	13.7	12.9
10/12/05	13.4	13.9	12.9
10/13/05	13.5	14.0	13.1
10/14/05	13.5	13.8	13.1
10/15/05	13.0	13.4	12.8
10/16/05	12.6	13.0	12.2
10/17/05	12.6	13.0	12.1
10/18/05	12.7	13.1	12.2
10/19/05	12.9	13.1	12.7
10/20/05	12.8	13.2	12.5
10/21/05	12.8	13.2	12.3
10/22/05	12.7	13.1	12.3
10/23/05	12.6	12.9	12.2
10/24/05	12.6	12.9	12.2
10/25/05	12.4	12.7	12.1
10/26/05	12.3	12.6	12.1
10/27/05	12.0	12.2	11.8
10/28/05	11.8	12.0	11.6
10/29/05	11.7	12.0	11.5
10/30/05	11.5	11.8	11.1
10/31/05	11.5	11.8	11.2

Appendix D

Stream Flow Data

Appendix D1

Measurement Summary – Pit 1 Project - 2005

							Cross Section Statistics							
							Width	Area	Average Depth	Average Velocity	Maximum Velocity	No. of Verticals	Msmnt. Rating	
Station	Date	Time (PDT)	Measured Discharge (cfs)	GHT (ft)	Rating Based Discharge (cfs)	Shift (%)	(ft)	(ft²)	(ft)	(ft/sec)	(ft/sec)			Method
PR1	06/23/05	1025	77.7	3.75	PR1_2004 r1 77.2	-1%	60.3	59.2	0.98	1.31	2.31	31	Fair - 8-10%	Price AA/Rod
	07/12/05	1015	40.4	3.53	38.5	-5%	59.4	40.2	0.68	1.00	1.93	33	Fair - 8-10%	Price AA/Rod
	08/16/05	1235	2.65	2.63	2.96	11%	17.3	10.4	0.60	0.25	1.42	16	Fair - 8-10%	Pygmy/Rod
PR2	08/17/05	1120	234	1.70	PR2_2004 222	-5%	36.5	155.2	4.25	1.51	2.53	23	Poor - >10%	Price AA/Rod
	09/15/05	1130	126	1.44	140	10%	40.0	194.5	4.86	0.65	1.06	21	Poor - >10%	ADP/RiverCat
PR4	06/23/05	1505	363	2.47	PR4_2004 379	4%	84.5	423.4	5.01	0.86	1.39	26	Fair - 8-10%	Price AA/Brd
	08/17/05	1500	305	2.34	340	10%	81.5	399.3	4.90	0.76	1.17	29	Fair - 8-10%	Price AA/Brd
	10/11/05	1340	307	2.36	346	11%	83.0	402.9	4.85	0.76	1.25	36	Fair - 8-10%	Price AA/Brd

Rating Information

Pit River at Pittville

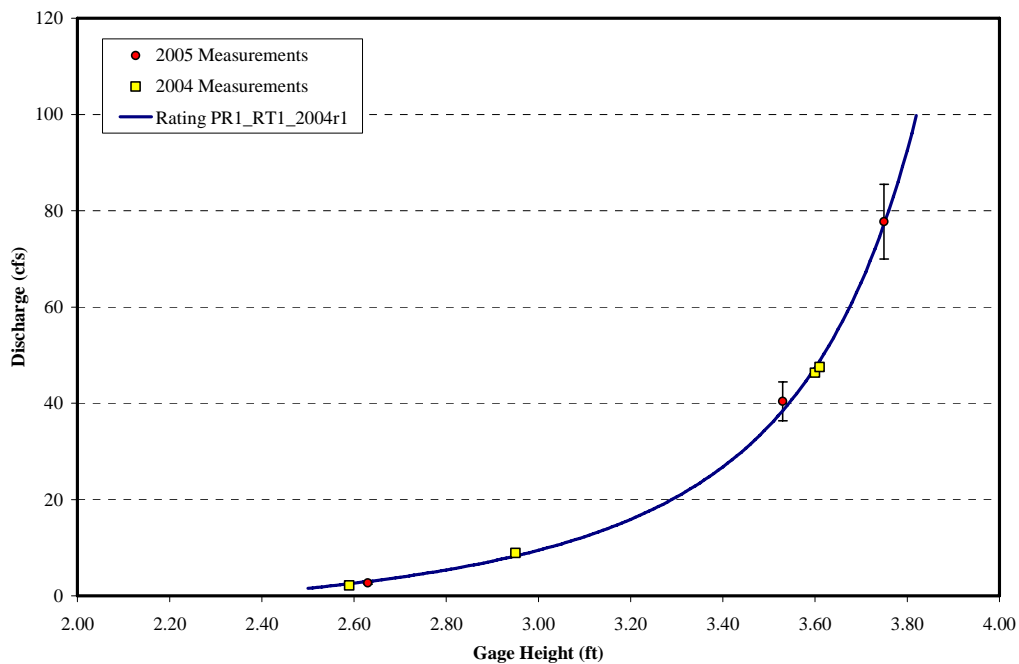
Station Pit River at Pittville
Rating PR1_RT1_2004 revision 1
Developed December-04
Revised December-05

Gage Height in feet - Discharge is cfs

GHT	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
2.5	---	---	---	---	---	---	---	---	---	2.50
2.6	2.61	2.72	2.84	2.96	3.08	3.21	3.33	3.46	3.59	3.73
2.7	3.86	4.00	4.14	4.29	4.43	4.58	4.73	4.89	5.04	5.21
2.8	5.37	5.54	5.71	5.88	6.06	6.24	6.42	6.61	6.81	7.00
2.9	7.20	7.41	7.62	7.83	8.05	8.27	8.50	8.73	8.97	9.21
3.0	9.46	9.72	9.98	10.2	10.5	10.8	11.1	11.4	11.7	12.0
3.1	12.3	12.6	12.9	13.3	13.6	14.0	14.3	14.7	15.1	15.5
3.2	15.9	16.3	16.7	17.2	17.6	18.1	18.5	19.0	19.5	20.0
3.3	20.6	21.1	21.7	22.2	22.8	23.4	24.1	24.7	25.4	26.1
3.4	26.8	27.5	28.3	29.0	29.9	30.7	31.5	32.4	33.4	34.3
3.5	35.3	36.3	37.4	38.5	39.6	40.8	42.0	43.2	44.6	45.9
3.6	47.3	48.8	50.3	51.9	53.6	55.3	57.1	59.0	60.9	63.0
3.7	65.1	67.3	69.6	72.0	74.6	77.2	80.0	82.9	86.0	---
3.8	---	---	---	---	---	---	---	---	---	---

Example: Shaded box highlights the flow for a gage height of 3.12 ft.

Rating Graph - Pit River at Pittville



Rating Information

Pit River at Big Eddy

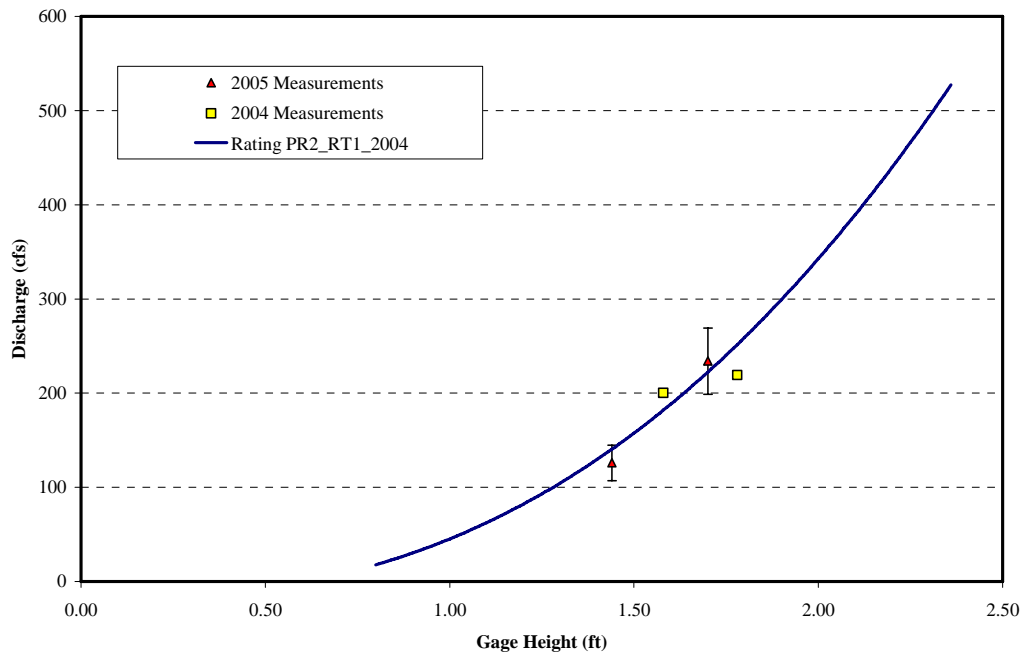
Station Pit River at Big Eddy
Rating PR2_RT1_2004
Developed November-92
Revised December-04

Gage Height in feet - Discharge is cfs

GHT	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.8	17.7	18.9	20.1	21.3	22.5	23.8	25.0	26.3	27.6	29.0
0.9	30.3	31.7	33.1	34.5	36.0	37.5	39.0	40.5	42.0	43.6
1.0	45.2	46.8	48.4	50.1	51.8	53.5	55.2	57.0	58.8	60.6
1.1	62.4	64.3	66.2	68.1	70.0	72.0	74.0	76.0	78.0	80.1
1.2	82.2	84.3	86.4	88.6	90.8	93.0	95.3	97.5	100	102
1.3	105	107	109	112	114	117	119	122	124	127
1.4	130	132	135	138	140	143	146	149	152	155
1.5	158	160	163	166	170	173	176	179	182	185
1.6	188	192	195	198	202	205	208	212	215	219
1.7	222	226	229	233	237	240	244	248	252	255
1.8	259	263	267	271	275	279	283	287	291	295
1.9	299	303	308	312	316	321	325	329	334	338
2.0	343	347	352	356	361	366	370	375	380	385
2.1	389	394	399	404	409	414	419	424	429	435
2.2	440	445	450	455	461	466	472	477	482	488
2.3	493	499	505	510	516	522	527	---	---	---

Example: Shaded box highlights the flow for a gage height of 2.12 ft.

Rating Graph - Pit River at Big Eddy



Rating Information

Pit River at Pit 1 Footbridge

Station Pit River at Pit 1 Footbridge

Rating PR4_RT1_2004

Developed November-92

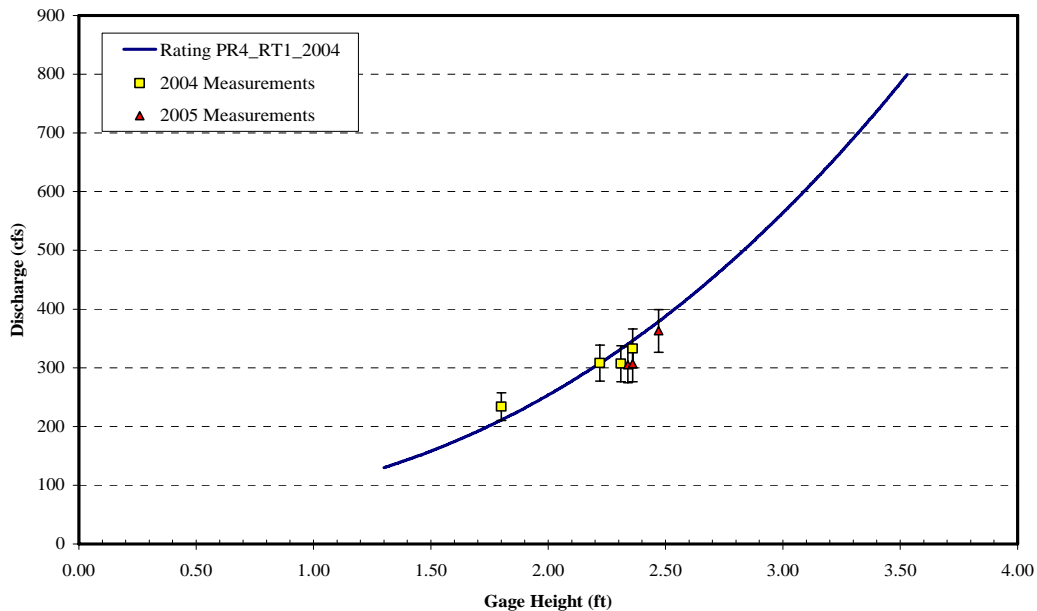
Revised December-04

Gage Height in feet - Discharge is cfs

GHT	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
1.3	130	131	132	134	135	136	138	139	140	142
1.4	143	145	146	148	149	151	152	153	155	157
1.5	158	160	161	163	164	166	168	169	171	173
1.6	174	176	178	179	181	183	185	186	188	190
1.7	192	194	196	197	199	201	203	205	207	209
1.8	211	213	215	217	219	221	223	225	227	229
1.9	232	234	236	238	240	242	245	247	249	251
2.0	254	256	258	261	263	265	268	270	272	275
2.1	277	280	282	285	287	290	292	295	297	300
2.2	302	305	308	310	313	316	318	321	324	327
2.3	329	332	335	338	340	343	346	349	352	355
2.4	358	361	364	367	370	373	376	379	382	385
2.5	388	391	394	397	400	403	407	410	413	416
2.6	420	423	426	429	433	436	439	443	446	450
2.7	453	457	460	463	467	470	474	478	481	485
2.8	488	492	496	499	503	507	510	514	518	521
2.9	525	529	533	537	540	544	548	552	556	560
3.0	564	568	572	576	580	584	588	592	596	600
3.1	604	609	613	617	621	625	630	634	638	642
3.2	647	651	655	660	664	669	673	677	682	686
3.3	691	695	700	705	709	714	718	723	728	732
3.4	737	742	746	751	756	761	765	770	775	780
3.5	785	790	795	800						

Example: Shaded box highlights the flow for a gage height of 2.12 ft.

Rating Graph - Pit River at Footbridge



Appendix D2

Summary of Hourly Stream Flow and Stream Stage Data

Pit River near Pittville

2005 Hourly Average Data

Date	Hourly Average Flow (cfs)			Hourly Average Stage (ft)		
	Max	Min	Mean	Max	Min	Mean
06/08/05	>86	>86	>86	4.92	4.70	4.80
06/09/05	>86	>86	>86	4.89	4.66	4.74
06/10/05	>86	>86	>86	4.87	4.33	4.62
06/11/05	>86	>86	>86	4.76	4.25	4.60
06/12/05	>86	>86	>86	4.50	4.21	4.37
06/13/05	>86	>86	>86	4.84	4.47	4.61
06/14/05	>86	>86	>86	4.79	4.35	4.50
06/15/05	>86	>86	>86	4.65	4.02	4.28
06/16/05	>86	83.6	85.8	4.55	3.77	4.07
06/17/05	>86	84.5	85.9	4.54	3.78	4.07
06/18/05	>86	>86	>86	4.10	3.80	3.97
06/19/05	>86	>86	>86	4.12	4.01	4.08
06/20/05	>86	>86	>86	4.59	3.95	4.16
06/21/05	>86	72.8	84.3	4.53	3.73	4.04
06/22/05	>86	71.2	83.7	4.50	3.73	4.02
06/23/05	>86	65.3	82.2	4.45	3.70	3.98
06/24/05	>86	55.2	78.1	4.40	3.65	3.94
06/25/05	>86	43.8	60.1	3.99	3.57	3.68
06/26/05	42.8	33.1	39.7	3.57	3.48	3.54
06/27/05	>86	29.2	48.2	4.13	3.43	3.63
06/28/05	>86	43.7	68.6	4.24	3.57	3.81
06/29/05	>86	40.4	66.4	4.27	3.55	3.81
06/30/05	>86	38.6	66.8	4.24	3.53	3.80
07/01/05	>86	35.5	64.5	4.20	3.50	3.77
07/02/05	>86	29.4	46.0	3.87	3.43	3.57
07/03/05	29.0	24.6	26.3	3.43	3.37	3.39
07/04/05	26.4	24.3	25.2	3.39	3.36	3.38
07/05/05	>86	25.4	42.3	4.00	3.38	3.54
07/06/05	>86	37.7	63.7	4.22	3.52	3.77
07/07/05	>86	36.7	64.3	4.20	3.51	3.77
07/08/05	>86	37.8	65.1	4.22	3.52	3.78
07/09/05	>86	31.5	45.8	3.88	3.46	3.57
07/10/05	32.0	25.8	29.2	3.47	3.39	3.43
07/11/05	>86	23.8	40.0	3.85	3.36	3.49
07/12/05	>86	31.7	57.2	4.15	3.46	3.71
07/13/05	>86	33.0	60.6	4.07	3.48	3.71
07/14/05	>86	33.8	60.4	4.09	3.48	3.72
07/15/05	>86	34.2	48.9	3.81	3.49	3.60
07/16/05						
07/17/05	44.7	36.1	40.1	3.58	3.51	3.54
07/18/05	35.8	25.2	29.0	3.51	3.38	3.43
07/19/05	>86	27.2	44.8	4.31	3.41	3.62

Pit River near Pittville

2005 Hourly Average Data

Date	Hourly Average Flow (cfs)			Hourly Average Stage (ft)		
	Max	Min	Mean	Max	Min	Mean
07/20/05	>86	27.8	55.0	4.31	3.41	3.70
07/21/05	>86	32.2	59.3	4.39	3.47	3.75
07/22/05	>86	33.2	59.1	4.42	3.48	3.76
07/23/05	>86	23.6	44.1	3.99	3.35	3.55
07/24/05	22.8	14.3	17.4	3.34	3.16	3.23
07/25/05	45.7	10.2	16.4	3.59	3.03	3.16
07/26/05	>86	24.1	43.4	4.27	3.36	3.60
07/27/05	>86	28.6	54.8	4.34	3.42	3.70
07/28/05	>86	27.3	51.7	4.00	3.41	3.63
07/29/05	>86	27.1	49.9	4.05	3.40	3.62
07/30/05	>86	24.6	40.9	3.87	3.37	3.53
07/31/05	23.7	13.6	17.8	3.35	3.14	3.24
08/01/05	14.1	9.95	11.4	3.15	3.02	3.07
08/02/05	15.9	9.54	12.7	3.20	3.00	3.11
08/03/05	17.0	11.0	14.1	3.23	3.06	3.15
08/04/05	16.2	12.3	14.4	3.21	3.10	3.16
08/05/05	13.9	9.35	11.2	3.15	3.00	3.06
08/06/05	9.90	8.29	9.20	3.02	2.95	2.99
08/07/05	12.6	7.54	9.76	3.11	2.92	3.00
08/08/05	11.1	6.07	8.11	3.06	2.84	2.93
08/09/05	6.75	6.39	6.59	2.88	2.86	2.87
08/10/05	6.57	5.83	6.24	2.87	2.83	2.85
08/11/05	7.21	6.76	7.01	2.90	2.88	2.89
08/12/05	7.15	6.37	6.81	2.90	2.86	2.88
08/13/05	6.38	5.37	5.85	2.86	2.80	2.83
08/14/05	5.25	3.83	4.47	2.79	2.70	2.74
08/15/05	3.89	3.26	3.59	2.70	2.65	2.68
08/16/05	3.35	2.24	2.75	2.66	2.57	2.61
08/17/05	2.45	2.12	2.28	2.59	2.56	2.57
08/18/05	2.40	2.03	2.20	2.58	2.55	2.56
08/19/05	2.20	1.95	2.08	2.56	2.54	2.55
08/20/05	2.20	1.92	2.06	2.56	2.54	2.55
08/21/05	2.12	1.88	2.01	2.56	2.53	2.55
08/22/05	2.11	1.87	1.99	2.55	2.53	2.54
08/23/05	2.16	1.94	2.04	2.56	2.54	2.55
08/24/05	2.24	2.02	2.12	2.57	2.55	2.56
08/25/05	2.29	1.99	2.14	2.57	2.54	2.56
08/26/05	2.20	1.93	2.07	2.56	2.54	2.55
08/27/05	2.16	1.83	2.03	2.56	2.53	2.55
08/28/05	2.03	1.74	1.91	2.55	2.52	2.54
08/29/05	1.99	1.72	1.87	2.54	2.52	2.53
08/30/05	2.01	1.77	1.87	2.54	2.52	2.53

Pit River near Pittville

2005 Hourly Average Data

Date	Hourly Average Flow (cfs)			Hourly Average Stage (ft)		
	Max	Min	Mean	Max	Min	Mean
08/31/05	1.98	1.74	1.87	2.54	2.52	2.53
09/01/05	1.90	1.66	1.78	2.53	2.51	2.52
09/02/05	1.93	1.73	1.82	2.54	2.52	2.53
09/03/05	1.97	1.77	1.86	2.54	2.52	2.53
09/04/05	1.90	1.75	1.83	2.53	2.52	2.53
09/05/05	1.96	1.80	1.88	2.54	2.52	2.53
09/06/05	2.03	1.89	1.95	2.55	2.53	2.54
09/07/05	2.29	1.99	2.18	2.57	2.54	2.56
09/08/05	2.52	2.30	2.40	2.59	2.57	2.58
09/09/05	2.57	2.31	2.48	2.60	2.57	2.59
09/10/05	3.56	2.57	2.92	2.68	2.60	2.63
09/11/05	4.23	3.60	3.97	2.73	2.68	2.71
09/12/05	4.24	3.92	4.08	2.73	2.70	2.72
09/13/05	5.80	4.25	4.99	2.83	2.73	2.78
09/14/05	6.24	5.86	6.08	2.85	2.83	2.84
09/15/05	5.99	5.12	5.51	2.84	2.78	2.81
09/16/05	5.56	5.26	5.40	2.81	2.79	2.80
09/17/05	5.61	5.32	5.49	2.81	2.80	2.81
09/18/05	5.98	5.39	5.69	2.84	2.80	2.82
09/19/05	6.35	5.69	5.83	2.86	2.82	2.83
09/20/05	7.18	6.38	6.72	2.90	2.86	2.88
09/21/05	7.64	7.19	7.37	2.92	2.90	2.91
09/22/05	7.58	7.15	7.38	2.92	2.90	2.91
09/23/05	7.60	7.31	7.44	2.92	2.91	2.91
09/24/05	7.74	7.42	7.59	2.93	2.91	2.92
09/25/05	7.43	6.68	7.00	2.91	2.87	2.89
09/26/05	7.29	6.70	6.98	2.90	2.87	2.89
09/27/05	7.15	6.13	6.71	2.90	2.84	2.87
09/28/05	7.78	7.20	7.54	2.93	2.90	2.92
09/29/05	7.83	7.58	7.69	2.93	2.92	2.92
09/30/05	7.81	7.47	7.67	2.93	2.91	2.92
10/01/05	7.46	6.37	6.92	2.91	2.86	2.89
10/02/05	9.51	7.22	8.08	3.00	2.90	2.94
10/03/05	13.6	9.77	11.6	3.14	3.01	3.08
10/04/05	16.6	13.7	15.1	3.22	3.14	3.18
10/05/05	17.8	16.6	17.3	3.24	3.22	3.23
10/06/05	17.9	17.4	17.6	3.25	3.24	3.24
10/07/05	17.7	17.2	17.4	3.24	3.23	3.24
10/08/05	18.1	8.54	13.9	3.25	2.96	3.13
10/09/05	10.7	9.93	10.4	3.05	3.02	3.04
10/10/05	11.4	10.4	11.0	3.07	3.04	3.06
10/11/05	12.2	11.5	11.8	3.10	3.07	3.09

Pit River near Pittville

2005 Hourly Average Data

Date	Hourly Average Flow (cfs)			Hourly Average Stage (ft)		
	Max	Min	Mean	Max	Min	Mean
10/12/05	13.9	12.4	13.1	3.15	3.10	3.12
10/13/05	15.3	13.8	14.5	3.19	3.15	3.16
10/14/05	15.8	15.2	15.4	3.20	3.18	3.19
10/15/05	17.3	15.7	16.5	3.23	3.19	3.21
10/16/05	20.8	17.4	18.4	3.30	3.24	3.26
10/17/05	35.9	21.2	27.4	3.51	3.31	3.40
10/18/05	42.6	36.8	40.2	3.56	3.51	3.55
10/19/05	54.8	40.6	45.9	3.65	3.55	3.59
10/20/05	54.6	42.6	47.4	3.65	3.57	3.60
10/21/05	45.3	41.0	43.1	3.59	3.55	3.57
10/22/05	46.5	36.8	41.7	3.59	3.51	3.56
10/23/05	42.0	38.9	40.7	3.56	3.53	3.55
10/24/05	40.0	35.4	37.7	3.54	3.50	3.52
10/25/05	68.2	36.6	47.6	3.71	3.51	3.59
10/26/05	>86	64.3	73.0	4.08	3.70	3.80
10/27/05	>86	72.4	82.9	4.12	3.73	3.86
10/28/05	>86	79.1	85.4	4.21	3.76	3.90
10/29/05	>86	72.8	80.2	4.03	3.73	3.80
10/30/05	74.2	67.6	70.5	3.74	3.71	3.72
10/31/05	>86	68.3	74.8	5.07	3.71	4.01

Pit River at Big Eddy

2005 Hourly Average Data

Date	Hourly Average Flow (cfs)			Hourly Average Stage (ft)		
	Max	Min	Mean	Max	Min	Mean
06/08/05	>530	>530	>530	2.78	2.60	2.68
06/09/05	>530	>530	>530	2.75	2.58	2.64
06/10/05	>530	493	527	2.74	2.30	2.52
06/11/05	>530	514	529	2.72	2.34	2.59
06/12/05	>530	439	484	2.43	2.20	2.30
06/13/05	>530	>530	>530	2.71	2.43	2.51
06/14/05	>530	501	526	2.67	2.31	2.44
06/15/05	>530	363	460	2.56	2.04	2.28
06/16/05	>530	275	382	2.48	1.84	2.08
06/17/05	>530	276	384	2.47	1.84	2.09
06/18/05	>530	285	358	2.38	1.86	2.03
06/19/05	402	373	392	2.13	2.07	2.11
06/20/05	>530	335	392	2.51	1.98	2.12
06/21/05	>530	263	374	2.46	1.81	2.06
06/22/05	>530	261	369	2.44	1.80	2.05
06/23/05	>530	253	356	2.40	1.78	2.02
06/24/05	524	237	341	2.35	1.74	1.98
06/25/05	485	220	284	2.28	1.69	1.85
06/26/05	218	199	210	1.69	1.63	1.66
06/27/05	405	177	209	2.13	1.56	1.65
06/28/05	451	215	290	2.22	1.68	1.87
06/29/05	464	207	292	2.25	1.66	1.87
06/30/05	454	203	292	2.23	1.64	1.87
07/01/05	435	195	281	2.19	1.62	1.84
07/02/05	420	184	248	2.16	1.59	1.76
07/03/05	182	162	170	1.58	1.51	1.54
07/04/05	167	160	163	1.53	1.51	1.52
07/05/05	345	162	182	2.01	1.51	1.57
07/06/05	443	201	273	2.21	1.64	1.82
07/07/05	437	198	281	2.19	1.63	1.84
07/08/05	442	201	282	2.20	1.64	1.84
07/09/05	424	187	248	2.17	1.60	1.76
07/10/05	185	166	179	1.59	1.53	1.57
07/11/05	276	158	175	1.84	1.50	1.55
07/12/05	414	184	248	2.15	1.59	1.76
07/13/05	404	188	263	2.13	1.60	1.80
07/14/05	389	190	261	2.10	1.61	1.79
07/15/05	>530	192	284	2.47	1.61	1.85
07/16/05	>530	>530	>530	2.78	2.48	2.68
07/17/05	>530	252	486	2.76	1.78	2.54
07/18/05	232	163	179	1.73	1.52	1.57
07/19/05	250	179	195	1.78	1.57	1.62

Pit River at Big Eddy

2005 Hourly Average Data

Date	Hourly Average Flow (cfs)			Hourly Average Stage (ft)		
	Max	Min	Mean	Max	Min	Mean
07/20/05	271	181	217	1.83	1.58	1.68
07/21/05	278	191	228	1.85	1.61	1.71
07/22/05	296	203	238	1.89	1.64	1.74
07/23/05	306	176	223	1.92	1.56	1.70
07/24/05	179	165	174	1.57	1.52	1.55
07/25/05	163	150	156	1.52	1.47	1.50
07/26/05	243	161	185	1.76	1.51	1.59
07/27/05	282	183	224	1.86	1.58	1.70
07/28/05	298	181	223	1.90	1.58	1.70
07/29/05	241	186	212	1.75	1.59	1.67
07/30/05	239	183	212	1.75	1.58	1.67
07/31/05	181	176	178	1.58	1.56	1.57
08/01/05	185	170	179	1.59	1.54	1.57
08/02/05	179	167	173	1.57	1.53	1.55
08/03/05	181	167	174	1.58	1.53	1.55
08/04/05	176	164	170	1.56	1.52	1.54
08/05/05	209	165	195	1.66	1.53	1.62
08/06/05	210	199	205	1.67	1.63	1.65
08/07/05	205	199	203	1.65	1.63	1.64
08/08/05	210	182	199	1.67	1.58	1.63
08/09/05	193	179	184	1.62	1.57	1.59
08/10/05	208	189	201	1.66	1.60	1.64
08/11/05	203	196	199	1.64	1.62	1.63
08/12/05	215	201	209	1.68	1.64	1.66
08/13/05	226	208	218	1.71	1.66	1.69
08/14/05	227	219	223	1.71	1.69	1.70
08/15/05	223	215	219	1.70	1.68	1.69
08/16/05	224	214	219	1.71	1.68	1.69
08/17/05	223	214	218	1.70	1.68	1.69
08/18/05	227	215	222	1.71	1.68	1.70
08/19/05	233	221	228	1.73	1.70	1.72
08/20/05	223	212	218	1.70	1.67	1.69
08/21/05	226	214	221	1.71	1.68	1.70
08/22/05	221	198	207	1.70	1.63	1.66
08/23/05	223	205	217	1.70	1.65	1.68
08/24/05	230	221	227	1.72	1.70	1.71
08/25/05	231	224	228	1.72	1.70	1.72
08/26/05	>530	227	304	2.36	1.71	1.88
08/27/05	>530	>530	>530	2.85	2.36	2.67
08/28/05	>530	311	503	2.87	1.93	2.68
08/29/05	289	215	238	1.87	1.68	1.74
08/30/05	229	215	222	1.72	1.68	1.70

Pit River at Big Eddy

2005 Hourly Average Data

Date	Hourly Average Flow (cfs)			Hourly Average Stage (ft)		
	Max	Min	Mean	Max	Min	Mean
08/31/05	230	218	224	1.72	1.69	1.71
09/01/05	236	221	230	1.74	1.70	1.72
09/02/05	236	225	230	1.74	1.71	1.72
09/03/05	240	230	235	1.75	1.72	1.73
09/04/05	244	230	237	1.76	1.72	1.74
09/05/05	245	228	239	1.76	1.72	1.75
09/06/05	238	223	233	1.74	1.70	1.73
09/07/05	235	219	228	1.74	1.69	1.72
09/08/05	257	226	238	1.79	1.71	1.74
09/09/05	255	226	236	1.79	1.71	1.74
09/10/05	247	239	242	1.77	1.75	1.75
09/11/05	259	241	252	1.80	1.75	1.78
09/12/05	252	235	244	1.78	1.74	1.76
09/13/05	245	202	235	1.76	1.64	1.74
09/14/05	192	143	154	1.61	1.45	1.49
09/15/05	151	145	148	1.48	1.46	1.47
09/16/05	214	147	161	1.68	1.46	1.51
09/17/05	243	220	234	1.76	1.69	1.73
09/18/05	244	226	236	1.76	1.71	1.74
09/19/05	>530	230	298	2.74	1.72	1.91
09/20/05	>530	240	322	2.73	1.75	1.96
09/21/05	249	240	244	1.77	1.75	1.76
09/22/05	253	236	245	1.78	1.74	1.76
09/23/05	247	234	242	1.77	1.73	1.76
09/24/05	277	240	256	1.85	1.75	1.79
09/25/05	266	241	252	1.82	1.75	1.78
09/26/05	264	176	222	1.81	1.56	1.70
09/27/05	186	174	182	1.59	1.56	1.58
09/28/05	179	163	174	1.57	1.52	1.55
09/29/05	191	162	169	1.61	1.52	1.54
09/30/05	248	200	234	1.77	1.64	1.73
10/01/05	249	227	238	1.77	1.71	1.74
10/02/05	250	241	246	1.78	1.75	1.76
10/03/05	253	241	250	1.78	1.75	1.77
10/04/05	256	246	251	1.79	1.77	1.78
10/05/05	254	171	218	1.79	1.54	1.68
10/06/05	172	167	169	1.55	1.53	1.54
10/07/05	265	172	244	1.82	1.55	1.76
10/08/05	263	243	256	1.81	1.76	1.79
10/09/05	251	241	247	1.78	1.75	1.77
10/10/05	252	223	243	1.78	1.70	1.76
10/11/05	261	223	241	1.80	1.70	1.75

Pit River at Big Eddy

2005 Hourly Average Data

Date	Hourly Average Flow (cfs)			Hourly Average Stage (ft)		
	Max	Min	Mean	Max	Min	Mean
10/12/05	287	229	253	1.87	1.72	1.78
10/13/05	241	229	237	1.75	1.72	1.74
10/14/05	236	222	231	1.74	1.70	1.72
10/15/05	237	224	232	1.74	1.70	1.73
10/16/05	245	235	240	1.76	1.74	1.75
10/17/05	262	242	253	1.81	1.76	1.78
10/18/05	276	262	271	1.84	1.81	1.83
10/19/05	278	270	275	1.85	1.83	1.84
10/20/05	279	271	277	1.85	1.83	1.85
10/21/05	270	261	266	1.83	1.81	1.82
10/22/05	264	255	261	1.81	1.79	1.80
10/23/05	262	254	259	1.81	1.79	1.80
10/24/05	259	255	257	1.80	1.79	1.80
10/25/05	279	255	261	1.85	1.79	1.80
10/26/05	353	279	296	2.02	1.85	1.89
10/27/05	355	299	322	2.03	1.90	1.95
10/28/05	367	303	328	2.05	1.91	1.97
10/29/05	374	291	320	2.07	1.88	1.95
10/30/05	291	286	289	1.88	1.87	1.87
10/31/05	>530	284	320	2.51	1.86	1.95

Pit River at Pit 1 Footbridge

2005 Hourly Average Data

Date	Hourly Average Flow (cfs)			Hourly Average Stage (ft)		
	Max	Min	Mean	Max	Min	Mean
06/08/05	>800	>800	>800	3.86	3.59	3.71
06/09/05	>800	737	794	3.81	3.40	3.60
06/10/05	>800	662	746	3.69	3.23	3.44
06/11/05	>800	744	797	3.71	3.41	3.64
06/12/05	770	603	666	3.47	3.10	3.24
06/13/05	>800	751	774	3.83	3.43	3.53
06/14/05	>800	711	757	3.91	3.34	3.52
06/15/05	>800	540	676	3.85	2.94	3.30
06/16/05	>800	440	576	3.66	2.66	3.02
06/17/05	>800	436	571	3.58	2.65	3.00
06/18/05	799	430	538	3.53	2.63	2.92
06/19/05	557	533	546	2.98	2.92	2.95
06/20/05	>800	455	530	3.56	2.71	2.90
06/21/05	784	377	522	3.50	2.46	2.86
06/22/05	751	361	504	3.43	2.41	2.81
06/23/05	724	351	479	3.37	2.38	2.74
06/24/05	703	322	454	3.33	2.27	2.67
06/25/05	671	312	404	3.26	2.24	2.52
06/26/05	314	275	293	2.24	2.09	2.16
06/27/05	421	245	272	2.60	1.96	2.07
06/28/05	524	278	362	2.90	2.10	2.40
06/29/05	573	258	364	3.02	2.02	2.39
06/30/05	565	254	365	3.00	2.00	2.39
07/01/05	561	254	358	2.99	2.00	2.37
07/02/05	541	273	355	2.94	2.08	2.37
07/03/05	327	268	301	2.29	2.06	2.19
07/04/05	315	275	300	2.25	2.09	2.19
07/05/05	389	290	312	2.50	2.15	2.24
07/06/05	623	341	433	3.14	2.34	2.63
07/07/05	667	342	455	3.25	2.35	2.68
07/08/05	658	349	456	3.22	2.37	2.69
07/09/05	659	349	439	3.23	2.37	2.64
07/10/05	348	319	336	2.37	2.26	2.32
07/11/05	332	297	317	2.31	2.18	2.26
07/12/05	536	321	395	2.93	2.27	2.51
07/13/05	613	324	425	3.12	2.28	2.60
07/14/05	562	322	414	3.00	2.27	2.57
07/15/05	741	318	430	3.41	2.26	2.61
07/16/05	>800	>800	>800	4.05	3.54	3.87
07/17/05	>800	477	759	4.06	2.77	3.79
07/18/05	436	293	331	2.65	2.16	2.30

Pit River at Pit 1 Footbridge

2005 Hourly Average Data

Date	Hourly Average Flow (cfs)			Hourly Average Stage (ft)		
	Max	Min	Mean	Max	Min	Mean
07/19/05	347	298	327	2.36	2.18	2.29
07/20/05	424	305	356	2.61	2.21	2.39
07/21/05	427	325	369	2.62	2.28	2.43
07/22/05	446	333	378	2.68	2.31	2.46
07/23/05	469	308	376	2.75	2.22	2.45
07/24/05	323	292	309	2.28	2.16	2.22
07/25/05	303	269	290	2.20	2.06	2.15
07/26/05	334	274	309	2.32	2.09	2.22
07/27/05	411	299	353	2.57	2.19	2.38
07/28/05	444	300	361	2.67	2.19	2.40
07/29/05	381	303	343	2.48	2.20	2.35
07/30/05	377	302	342	2.47	2.20	2.34
07/31/05	313	284	301	2.24	2.13	2.19
08/01/05	317	283	302	2.25	2.12	2.20
08/02/05	314	276	296	2.24	2.09	2.18
08/03/05	316	273	294	2.25	2.08	2.17
08/04/05	307	269	288	2.22	2.07	2.14
08/05/05	323	271	306	2.28	2.08	2.21
08/06/05	335	294	316	2.32	2.17	2.25
08/07/05	328	293	310	2.29	2.16	2.23
08/08/05	326	274	302	2.29	2.09	2.20
08/09/05	299	264	281	2.19	2.04	2.12
08/10/05	316	269	293	2.25	2.06	2.16
08/11/05	305	274	291	2.21	2.08	2.15
08/12/05	315	275	294	2.25	2.09	2.17
08/13/05	316	278	299	2.25	2.10	2.19
08/14/05	322	286	302	2.27	2.13	2.20
08/15/05	314	283	297	2.24	2.12	2.18
08/16/05	314	277	298	2.25	2.10	2.18
08/17/05	310	275	293	2.23	2.09	2.16
08/18/05	318	279	298	2.26	2.11	2.18
08/19/05	327	286	307	2.29	2.14	2.22
08/20/05	321	276	298	2.27	2.10	2.18
08/21/05	320	279	298	2.27	2.11	2.18
08/22/05	304	261	284	2.21	2.03	2.13
08/23/05	313	262	289	2.24	2.04	2.15
08/24/05	323	276	298	2.28	2.10	2.18
08/25/05	330	280	302	2.30	2.11	2.20
08/26/05	593	282	358	3.07	2.12	2.38
08/27/05	>800	607	757	3.85	3.11	3.57
08/28/05	>800	471	761	4.00	2.75	3.74

Pit River at Pit 1 Footbridge

2005 Hourly Average Data

Date	Hourly Average Flow (cfs)			Hourly Average Stage (ft)		
	Max	Min	Mean	Max	Min	Mean
08/29/05	435	282	343	2.65	2.12	2.34
08/30/05	354	282	314	2.39	2.12	2.24
08/31/05	357	284	312	2.40	2.13	2.23
09/01/05	364	279	313	2.42	2.11	2.24
09/02/05	364	284	314	2.42	2.13	2.24
09/03/05	369	286	319	2.44	2.14	2.26
09/04/05	371	286	322	2.45	2.13	2.27
09/05/05	382	283	326	2.48	2.12	2.29
09/06/05	369	280	316	2.44	2.11	2.25
09/07/05	363	276	310	2.42	2.09	2.23
09/08/05	376	277	313	2.46	2.10	2.23
09/09/05	344	283	308	2.35	2.12	2.22
09/10/05	364	291	318	2.42	2.16	2.26
09/11/05	383	287	327	2.49	2.14	2.29
09/12/05	383	288	327	2.48	2.14	2.29
09/13/05	376	283	320	2.46	2.12	2.26
09/14/05	274	214	244	2.09	1.82	1.96
09/15/05	274	209	234	2.09	1.79	1.91
09/16/05	273	208	240	2.08	1.78	1.93
09/17/05	367	267	320	2.43	2.06	2.26
09/18/05	373	287	323	2.45	2.14	2.27
09/19/05	733	290	370	3.39	2.15	2.41
09/20/05	>800	310	467	3.58	2.23	2.71
09/21/05	374	304	332	2.46	2.21	2.31
09/22/05	377	303	332	2.47	2.20	2.31
09/23/05	339	303	321	2.33	2.20	2.27
09/24/05	393	311	341	2.52	2.23	2.34
09/25/05	370	306	333	2.44	2.22	2.31
09/26/05	343	263	314	2.35	2.04	2.24
09/27/05	297	247	271	2.18	1.97	2.07
09/28/05	294	240	258	2.17	1.94	2.02
09/29/05	284	227	248	2.13	1.88	1.97
09/30/05	355	247	303	2.39	1.97	2.20
10/01/05	320	289	309	2.27	2.15	2.22
10/02/05	348	302	320	2.37	2.20	2.26
10/03/05	349	305	322	2.37	2.21	2.27
10/04/05	358	313	329	2.40	2.24	2.30
10/05/05	339	250	305	2.34	1.99	2.21
10/06/05	278	236	252	2.10	1.92	1.99
10/07/05	364	234	309	2.42	1.91	2.22
10/08/05	358	302	330	2.40	2.20	2.30

Pit River at Pit 1 Footbridge

2005 Hourly Average Data

Date	Hourly Average Flow (cfs)			Hourly Average Stage (ft)		
	Max	Min	Mean	Max	Min	Mean
10/09/05	353	301	323	2.38	2.20	2.28
10/10/05	359	293	321	2.40	2.16	2.27
10/11/05	357	288	317	2.40	2.14	2.25
10/12/05	386	293	330	2.49	2.16	2.30
10/13/05	346	304	318	2.36	2.20	2.26
10/14/05	332	288	308	2.31	2.14	2.22
10/15/05	322	282	304	2.27	2.12	2.21
10/16/05	343	296	316	2.35	2.17	2.25
10/17/05	351	301	323	2.38	2.19	2.28
10/18/05	370	316	339	2.44	2.25	2.33
10/19/05	356	329	345	2.39	2.30	2.35
10/20/05	372	332	353	2.45	2.31	2.38
10/21/05	365	324	338	2.42	2.28	2.33
10/22/05	356	315	330	2.40	2.25	2.30
10/23/05	350	310	327	2.37	2.23	2.29
10/24/05	349	313	326	2.37	2.24	2.29
10/25/05	348	309	325	2.37	2.22	2.28
10/26/05	390	337	357	2.51	2.33	2.40
10/27/05	410	364	388	2.57	2.42	2.50
10/28/05	411	366	390	2.57	2.43	2.51
10/29/05	432	354	394	2.64	2.39	2.52
10/30/05	387	350	365	2.50	2.37	2.42
10/31/05	576	351	379	3.03	2.38	2.47

Appendix E

Meteorology Data

Appendix E
Daily Average Meteorological Data

Pit 3 Intake

Daily Average Values						
Date	Wind			Air Temp (°C)	Relative Humidity (%)	Solar Radiation (Watts/m ²)
	Speed (mph)	Direction (degrees)	Sigma (s*)			
16-May	0.47	194.89	39.71	9.37	87.6	133
17-May	0.57	202.23	32.52	7.22	88.4	103
18-May	0.33	179.92	39.64	9.33	91.5	71
19-May	0.97	200.98	28.26	11.65	75.1	301
20-May	0.96	207.74	34.28	11.07	67.8	300
21-May	0.78	189.18	27.88	12.69	60.7	321
22-May	0.91	197.41	30.75	14.93	56.7	340
23-May	0.64	183.02	33.28	14.28	50.4	335
24-May	0.82	174.97	37.29	16.05	46.3	343
25-May	0.67	205.15	35.01	19.00	48.4	339
26-May	0.49	176.52	33.21	20.49	54.0	339
27-May	0.66	184.47	27.60	21.14	58.0	343
28-May	1.32	204.07	29.40	16.89	60.9	312
29-May	0.68	188.35	33.73	12.01	72.5	159
30-May	0.46	177.47	41.01	14.99	76.0	259
31-May	0.51	185.43	37.59	16.18	73.7	261
1-Jun	0.82	156.80	47.47	14.19	53.5	353
2-Jun	1.20	171.81	38.90	13.25	50.8	349
3-Jun	0.61	185.87	40.72	14.96	52.3	344
4-Jun	0.76	182.35	32.85	15.78	49.8	350
5-Jun	0.89	164.53	48.56	12.20	49.6	298
6-Jun	0.87	189.35	36.72	7.32	71.5	212
7-Jun	0.67	172.53	37.14	9.36	64.4	240
8-Jun	0.37	175.57	27.04	9.76	89.0	119
9-Jun	0.51	145.33	29.59	13.93	80.8	282
10-Jun	0.64	170.32	33.20	15.90	65.9	313
11-Jun	0.76	182.31	38.20	15.06	57.7	329
12-Jun	0.59	169.86	39.25	14.22	53.6	352
13-Jun	0.55	184.03	31.57	16.54	52.1	332
14-Jun	0.81	188.00	28.85	16.72	53.1	335
15-Jun	0.69	185.60	31.88	17.25	52.4	329
16-Jun	0.55	198.50	38.12	10.46	78.1	85
17-Jun	0.49	209.03	48.96	9.90	73.7	140
18-Jun	0.71	190.97	36.22	11.20	72.0	213
19-Jun	0.84	192.56	32.58	12.61	71.1	295
20-Jun	0.72	180.33	30.46	14.66	65.8	343
21-Jun	0.85	186.98	30.10	15.28	62.0	328
22-Jun	0.65	181.19	33.13	15.86	55.5	353
23-Jun	0.69	180.38	29.66	16.98	56.9	349

Daily Average Meteorological Data

Pit 3 Intake

Daily Average Values						
Date	Wind			Air Temp (°C)	Relative Humidity (%)	Solar Radiation (Watts/m ²)
	Speed (mph)	Direction (degrees)	Sigma (s*)			
24-Jun	0.80	181.18	28.70	17.41	58.3	347
25-Jun	0.80	183.15	27.71	17.14	65.8	264
26-Jun	0.75	183.33	29.85	18.60	57.1	332
27-Jun	0.91	190.43	28.61	18.31	55.0	312
28-Jun	0.55	179.86	32.94	18.47	58.3	326
29-Jun	0.56	185.31	32.73	20.18	55.1	352
30-Jun	0.56	184.49	25.56	21.35	52.1	352
1-Jul	0.73	190.27	27.18	21.90	54.4	347
2-Jul	0.62	184.20	36.73	21.17	52.0	346
3-Jul	0.56	178.75	34.08	19.75	50.7	344
4-Jul	0.59	179.19	30.80	20.33	50.3	348
5-Jul	0.62	182.95	27.14	21.08	51.1	348
6-Jul	0.57	183.74	32.01	21.93	54.8	339
7-Jul	0.78	191.06	27.53	21.39	58.4	341
8-Jul	0.83	189.13	28.20	21.19	57.0	338
9-Jul	0.88	182.41	31.45	20.04	59.3	296
10-Jul	0.84	181.60	32.49	19.70	59.0	316
11-Jul	0.62	182.70	25.77	20.40	57.3	344
12-Jul	0.62	185.29	23.19	21.61	53.4	347
13-Jul	0.50	181.74	28.88	22.45	52.8	343
14-Jul	0.64	185.78	24.31	23.00	52.3	335
15-Jul	0.68	186.43	22.63	23.77	51.9	332
16-Jul	0.64	187.51	24.94	23.94	50.4	335
17-Jul	0.53	186.23	25.25	24.38	49.8	336
18-Jul	0.48	183.19	23.82	25.23	48.6	334
19-Jul	0.56	188.77	27.66	25.26	50.9	331
20-Jul	0.63	186.39	24.79	24.26	50.1	336
21-Jul	0.50	191.43	27.05	21.81	61.3	165
22-Jul	0.81	197.33	30.36	21.67	48.3	339
23-Jul	0.57	185.54	26.28	21.61	45.6	339
24-Jul	0.70	187.78	26.56	21.76	44.2	338
25-Jul	0.47	179.37	32.25	21.04	41.8	339
26-Jul	0.60	182.81	30.97	22.08	42.4	337
27-Jul	0.82	185.75	23.57	21.94	44.9	330
28-Jul	0.79	187.11	23.95	21.68	41.5	330
29-Jul	0.73	184.35	26.60	22.08	46.9	320
30-Jul	0.75	183.87	24.68	23.02	52.3	318
31-Jul	0.81	186.87	25.27	22.55	48.3	320
1-Aug	0.80	189.42	24.83	20.64	43.3	322
2-Aug	0.70	193.30	26.49	20.69	42.8	313
3-Aug	0.77	189.94	23.93	20.44	44.1	319

Daily Average Meteorological Data

Pit 3 Intake

Daily Average Values						
Date	Wind			Air Temp (°C)	Relative Humidity (%)	Solar Radiation (Watts/m ²)
	Speed (mph)	Direction (degrees)	Sigma (s*)			
4-Aug	0.84	184.09	24.60	21.28	42.7	313
5-Aug	0.81	188.79	24.74	22.04	44.0	306
6-Aug	0.74	185.03	23.29	22.25	40.4	315
7-Aug	0.75	190.82	25.85	21.91	41.2	304
8-Aug	0.74	185.87	26.52	22.21	42.6	288
9-Aug	0.68	187.09	27.89	22.35	42.8	300
10-Aug	0.72	188.30	28.57	21.05	41.6	306
11-Aug	0.62	174.07	31.80	20.62	40.5	307
12-Aug	0.63	182.90	28.80	20.62	38.1	306
13-Aug	0.64	181.58	33.62	20.89	36.7	306
14-Aug	0.59	178.90	30.98	21.36	39.8	300
15-Aug	1.05	176.82	28.00	20.63	51.1	279
16-Aug	0.72	192.85	28.59	20.51	52.1	281
17-Aug	0.70	186.20	29.79	21.16	51.3	281
18-Aug	0.86	186.18	25.94	20.07	48.0	283
19-Aug	0.85	186.23	26.75	18.77	50.3	281
20-Aug	0.88	183.90	24.06	18.86	46.5	275
21-Aug	0.76	184.98	26.89	19.16	42.5	280
22-Aug	0.56	178.50	31.59	20.50	42.5	274
23-Aug	0.65	187.14	27.81	21.03	41.8	269
24-Aug	0.80	190.91	26.62	19.62	45.8	266
25-Aug	0.88	183.37	26.49	18.78	44.6	264
26-Aug	0.75	186.70	25.74	17.78	41.5	266
27-Aug	0.66	192.33	28.12	18.35	39.0	263
28-Aug	0.76	193.05	27.14	19.33	45.7	261
29-Aug	1.03	186.13	42.79	17.59	43.4	259
30-Aug	1.14	174.63	49.26	18.35	33.7	257
31-Aug	0.74	190.31	35.53	18.54	32.8	258
1-Sep	0.73	186.98	24.85	18.15	41.0	250
2-Sep	0.73	188.32	27.05	18.07	42.9	249
3-Sep	0.74	193.31	28.44	16.89	44.7	244
4-Sep	0.73	191.58	28.41	17.12	43.5	239
5-Sep	0.64	192.53	28.75	15.86	48.2	243
6-Sep	0.70	188.11	27.75	15.92	47.6	242
7-Sep	0.65	181.21	30.78	17.16	45.1	244
8-Sep	0.79	196.43	29.89	18.06	45.8	235
9-Sep	0.84	201.43	32.24	14.00	69.5	217
10-Sep	0.60	197.14	32.54	10.15	63.5	233
11-Sep	0.60	191.86	30.71	10.91	60.8	204
12-Sep	0.54	194.97	29.78	11.21	57.5	225
13-Sep	0.50	195.78	28.20	12.66	53.8	231

Daily Average Meteorological Data

Pit 3 Intake

Daily Average Values						
Date	Wind			Air Temp (°C)	Relative Humidity (%)	Solar Radiation (Watts/m ²)
	Speed (mph)	Direction (degrees)	Sigma (s*)			
14-Sep	0.61	196.65	25.84	13.91	54.1	229
15-Sep	0.69	198.42	24.75	14.36	56.5	224
16-Sep	0.60	209.27	28.55	11.60	74.5	183
17-Sep	0.54	183.09	30.25	11.25	65.6	203
18-Sep	0.53	192.26	33.98	12.44	55.7	221
19-Sep	0.62	190.52	21.72	14.14	50.7	219
20-Sep	0.52	198.15	30.37	16.52	45.0	222
21-Sep	0.68	197.43	34.49	18.07	48.5	209
22-Sep	0.65	198.84	25.43	15.87	55.0	210
23-Sep	1.05	174.75	38.98	9.95	68.5	83
24-Sep	1.03	173.65	40.97	9.45	53.4	206
25-Sep	1.05	193.80	40.05	12.07	42.1	207
26-Sep	0.55	216.72	28.25	12.16	56.2	99
27-Sep	0.48	193.07	26.65	15.56	59.7	173
28-Sep	0.53	203.13	28.50	14.60	51.6	199
29-Sep	0.46	189.54	23.34	14.22	46.8	197
30-Sep	0.56	199.38	23.36	14.14	49.0	178
1-Oct	0.77	180.65	41.05	14.45	61.1	82
2-Oct	0.66	189.48	27.83	8.76	65.9	150
3-Oct	0.59	190.12	34.57	8.36	71.7	138
4-Oct	0.78	181.59	33.47	7.65	63.4	153
5-Oct	0.80	190.54	30.78	9.89	50.8	172
6-Oct	0.50	199.77	23.77	10.87	45.4	170
7-Oct	0.47	196.77	26.45	11.93	54.4	147
8-Oct	0.61	202.05	26.93	11.42	53.7	161
9-Oct	0.71	192.07	34.56	9.69	56.1	157
10-Oct	0.43	217.55	25.20	11.38	49.5	156
11-Oct	0.46	209.17	26.38	12.08	55.5	132
12-Oct	0.40	195.84	24.80	11.28	59.1	147
13-Oct	0.54	205.17	23.21	11.59	57.8	140
14-Oct	0.65	190.70	36.95	11.90	54.9	112
15-Oct	0.51	212.10	36.26	7.78	82.3	91
16-Oct	0.63	207.77	34.17	10.15	63.6	134
17-Oct	0.42	211.49	25.10	11.56	57.4	134
18-Oct	0.62	200.68	27.12	11.37	64.1	125
19-Oct	0.59	187.08	31.74	10.41	82.2	40
20-Oct	0.35	210.79	27.35	10.16	70.6	98
21-Oct	0.45	213.00	20.26	9.84	63.9	126
22-Oct	0.52	204.92	20.37	9.70	63.5	112
23-Oct	0.49	216.74	20.88	9.16	65.8	103
24-Oct	0.48	215.99	19.89	9.69	63.0	102

Daily Average Meteorological Data

Pit 3 Intake

Daily Average Values						
Date	Wind			Air Temp (°C)	Relative Humidity (%)	Solar Radiation (Watts/m ²)
	Speed (mph)	Direction (degrees)	Sigma (s*)			
25-Oct	0.57	197.72	35.59	9.78	69.9	106
26-Oct	0.24	202.61	29.64	9.15	88.3	42
27-Oct	0.32	210.33	21.87	7.58	86.0	60
28-Oct	0.43	192.91	25.18	8.40	85.3	93
29-Oct	0.45	208.26	25.52	7.56	80.9	70
30-Oct	0.44	237.60	24.33	5.14	80.5	77
31-Oct	0.43	222.03	17.30	6.96	72.4	90

Daily Average Meteorological Data

Pit 1 Forebay

Daily Average Values						
Date	Wind			Air Temp (°C)	Relative Humidity (%)	Solar Radiation (Watts/m ²)
	Speed (mph)	Direction (degrees)	Sigma (s*)			
16-May	2.50	222.51	36.32	8.94	78.4	150
17-May	2.48	248.26	29.67	6.59	84.1	127
18-May	1.73	200.33	37.49	8.27	90.5	76
19-May	3.28	245.53	25.40	11.26	67.6	287
20-May	2.91	230.38	36.05	10.38	66.8	326
21-May	2.17	208.06	32.74	13.13	57.2	314
22-May	3.15	244.87	25.59	15.15	52.9	344
23-May	1.77	247.12	34.61	14.75	43.5	318
24-May	1.93	265.32	32.40	16.74	42.3	333
25-May	1.96	231.18	24.97	19.33	42.5	299
26-May	1.40	239.39	36.93	20.52	50.8	302
27-May	1.71	220.93	35.94	20.63	57.3	327
28-May	3.32	235.69	34.92	15.98	61.1	308
29-May	2.39	248.41	33.25	11.83	68.7	204
30-May	1.63	267.62	44.17	16.00	64.5	200
31-May	1.96	261.74	30.93	15.93	68.1	200
1-Jun	1.94	189.46	34.77	13.12	54.6	263
2-Jun	2.31	194.66	30.55	13.18	52.6	208
3-Jun	1.47	262.85	38.88	15.24	49.2	276
4-Jun	2.54	241.62	26.85	15.50	46.6	239
5-Jun	3.08	291.48	29.42	11.19	50.3	205
6-Jun	2.70	259.01	33.01	7.28	66.4	245
7-Jun	2.43	227.98	32.10	8.37	63.7	228
8-Jun	1.28	240.24	34.33	8.66	85.9	143
9-Jun	1.46	274.03	35.60	13.04	78.9	211
10-Jun	1.39	244.01	43.95	14.18	73.2	263
11-Jun	1.62	231.67	34.56	14.42	60.6	277
12-Jun	1.48	234.07	33.55	13.86	51.1	211
13-Jun	1.39	270.36	38.22	16.88	46.3	261
14-Jun	2.63	243.75	26.16	16.76	53.1	309
15-Jun	2.75	293.39	25.15	17.22	48.5	266
16-Jun	2.27	226.22	35.95	10.75	69.7	84
17-Jun	2.73	238.83	29.30	9.44	69.4	218
18-Jun	2.20	245.06	27.55	10.37	71.9	216
19-Jun	2.13	248.95	33.80	11.92	71.2	311
20-Jun	1.91	256.63	33.03	14.68	64.8	301
21-Jun	2.44	250.15	30.23	14.84	64.2	299
22-Jun	1.77	265.02	36.45	15.56	55.8	334
23-Jun	1.77	213.85	35.67	17.10	55.9	334
24-Jun	2.36	215.98	31.15	17.03	58.6	320
25-Jun	2.18	264.98	33.99	16.77	64.4	268
26-Jun	2.56	217.44	35.91	18.06	54.8	318

Daily Average Meteorological Data

Pit 1 Forebay

Daily Average Values						
Date	Wind			Air Temp (°C)	Relative Humidity (%)	Solar Radiation (Watts/m ²)
	Speed (mph)	Direction (degrees)	Sigma (s*)			
27-Jun	2.65	233.42	38.33	17.79	56.0	309
28-Jun	1.43	244.49	42.25	18.40	54.9	306
29-Jun	1.54	280.36	30.06	20.00	52.1	273
30-Jun	1.56	249.34	29.59	21.58	47.3	261
1-Jul	2.45	248.89	26.97	22.38	48.2	276
2-Jul	2.40	306.03	25.56	22.29	40.1	315
3-Jul	2.02	258.98	29.74	20.22	43.2	310
4-Jul	1.76	240.64	31.54	20.64	43.4	256
5-Jul	1.79	247.97	37.20	21.77	45.1	270
6-Jul	2.32	251.84	29.44	22.21	48.2	286
7-Jul	2.85	270.18	30.49	21.72	56.8	312
8-Jul	2.45	243.33	29.80	20.45	58.6	313
9-Jul	3.16	245.92	27.23	18.88	61.6	263
10-Jul	2.53	236.84	39.68	19.10	58.8	290
11-Jul	1.68	267.68	34.99	20.04	56.7	315
12-Jul	1.68	246.16	37.96	21.69	50.5	302
13-Jul	1.46	274.43	35.83	23.01	48.0	295
14-Jul	1.60	240.66	38.54	23.62	44.4	286
15-Jul	1.99	271.93	27.60	23.85	47.7	280
16-Jul	1.91	247.95	31.57	24.27	45.4	286
17-Jul	1.58	246.05	33.78	25.04	45.6	285
18-Jul	1.71	262.37	29.27	25.59	43.1	264
19-Jul	2.00	269.94	33.81	25.05	48.2	273
20-Jul	1.68	256.97	35.75	24.02	47.0	267
21-Jul	1.40	260.99	44.10	22.59	54.2	160
22-Jul	2.10	263.16	32.66	22.03	45.0	264
23-Jul	1.70	250.45	35.34	22.13	41.5	263
24-Jul	2.09	260.43	30.39	22.28	40.2	232
25-Jul	1.09	244.36	31.51	21.13	36.2	231
26-Jul	1.40	252.83	35.01	22.70	34.7	263
27-Jul	1.98	273.00	29.55	22.10	41.9	264
28-Jul	1.99	255.22	30.85	22.17	39.5	280
29-Jul	2.09	241.93	31.60	22.02	43.5	265
30-Jul	1.93	255.51	35.10	22.85	50.3	265
31-Jul	2.12	254.38	30.15	22.26	47.4	244
1-Aug	2.16	261.65	31.66	20.26	41.3	255
2-Aug	1.65	242.52	40.89	20.81	41.3	237
3-Aug	1.81	270.03	33.30	20.99	41.8	267
4-Aug	1.60	270.10	33.34	21.31	40.9	269
5-Aug	1.70	250.00	34.25	21.97	43.4	269
6-Aug	1.97	265.73	31.90	22.14	38.8	276
7-Aug	1.89	262.55	36.55	22.20	37.9	270

Daily Average Meteorological Data

Pit 1 Forebay

Daily Average Values						
Date	Wind			Air Temp (°C)	Relative Humidity (%)	Solar Radiation (Watts/m ²)
	Speed (mph)	Direction (degrees)	Sigma (s*)			
8-Aug	1.94	255.30	34.78	22.14	42.0	246
9-Aug	2.26	254.48	32.54	22.49	40.7	272
10-Aug	1.88	232.13	35.83	21.30	40.1	275
11-Aug	1.36	258.68	33.89	20.99	37.0	278
12-Aug	1.35	261.02	36.09	20.36	37.5	269
13-Aug	1.10	273.04	31.74	20.86	35.7	277
14-Aug	1.68	267.36	37.30	22.04	36.1	272
15-Aug	2.67	264.99	32.01	20.33	49.5	255
16-Aug	1.92	209.37	36.73	20.16	52.3	260
17-Aug	2.35	225.94	38.29	20.70	51.5	262
18-Aug	2.33	253.57	36.50	19.33	50.7	263
19-Aug	1.74	258.86	33.26	18.41	51.8	264
20-Aug	1.78	267.53	30.54	18.65	47.4	256
21-Aug	1.82	256.99	33.23	18.66	43.2	264
22-Aug	1.53	286.39	33.95	20.37	41.6	266
23-Aug	2.04	247.78	35.53	21.10	39.7	260
24-Aug	2.15	259.14	33.16	19.31	44.2	260
25-Aug	2.06	265.01	29.07	18.15	45.2	259
26-Aug	1.78	264.71	31.31	17.23	42.8	259
27-Aug	1.52	236.56	34.74	18.03	39.3	261
28-Aug	2.24	253.13	28.41	19.29	42.5	253
29-Aug	2.36	292.70	34.45	17.18	43.2	258
30-Aug	1.77	141.40	34.76	16.08	43.0	257
31-Aug	1.40	255.64	29.57	18.34	35.2	258
1-Sep	1.60	256.58	37.99	18.54	39.6	250
2-Sep	2.12	265.60	29.99	17.69	42.4	248
3-Sep	2.19	263.27	32.59	16.15	45.8	241
4-Sep	1.86	240.38	43.57	16.29	44.9	242
5-Sep	1.62	243.52	37.51	15.87	49.0	240
6-Sep	1.58	246.99	35.62	15.87	46.7	233
7-Sep	1.84	243.05	39.51	17.14	44.1	232
8-Sep	2.26	252.14	40.93	16.98	47.9	186
9-Sep	2.47	228.37	45.54	13.20	65.9	195
10-Sep	1.44	182.90	47.82	9.82	62.1	230
11-Sep	1.56	234.05	38.04	10.28	63.5	213
12-Sep	1.44	241.12	36.86	11.10	57.4	227
13-Sep	1.28	261.20	35.67	12.76	50.9	229
14-Sep	1.45	243.10	41.00	13.87	51.2	227
15-Sep	1.63	248.80	35.83	14.10	56.0	223
16-Sep	2.17	222.69	39.47	12.13	64.4	172
17-Sep	1.23	238.67	40.46	11.24	63.3	191
18-Sep	1.21	194.19	44.69	12.34	53.3	220

Daily Average Meteorological Data

Pit 1 Forebay

Daily Average Values						
Date	Wind			Air Temp (°C)	Relative Humidity (%)	Solar Radiation (Watts/m ²)
	Speed (mph)	Direction (degrees)	Sigma (s*)			
19-Sep	1.42	218.50	36.02	15.13	44.7	217
20-Sep	1.82	214.16	37.03	17.39	38.5	216
21-Sep	1.62	188.40	44.93	17.92	45.4	210
22-Sep	1.93	222.58	36.51	15.24	54.9	202
23-Sep	2.07	214.66	36.30	8.01	75.8	53
24-Sep	1.77	164.10	29.14	7.40	59.6	211
25-Sep	1.75	162.56	39.65	11.50	43.9	210
26-Sep	0.97	206.57	50.42	11.82	55.8	98
27-Sep	1.10	161.30	53.83	15.85	56.1	173
28-Sep	1.05	246.46	37.63	14.46	47.1	204
29-Sep	0.96	239.98	40.20	14.67	42.1	205
30-Sep	1.69	225.96	38.49	14.77	43.7	193
1-Oct	3.21	238.74	26.88	14.41	58.2	73
2-Oct	1.94	213.27	41.37	7.84	69.5	162
3-Oct	2.13	235.64	30.53	7.56	74.5	157
4-Oct	1.56	196.68	30.56	6.98	67.3	169
5-Oct	1.26	169.63	38.06	9.24	51.5	188
6-Oct	0.93	169.09	49.60	11.30	44.5	186
7-Oct	1.28	243.88	40.93	11.65	58.4	147
8-Oct	1.86	256.03	35.54	11.61	53.5	177
9-Oct	1.12	152.57	48.32	8.60	57.2	180
10-Oct	0.86	214.17	50.74	11.38	48.8	180
11-Oct	0.94	205.21	49.58	12.40	51.9	156
12-Oct	0.93	202.34	41.45	11.57	59.0	176
13-Oct	1.11	217.66	39.19	11.72	55.7	169
14-Oct	2.86	220.18	32.21	12.72	49.8	153
15-Oct	1.63	215.52	44.35	7.47	77.2	112
16-Oct	1.42	230.76	36.33	10.33	64.4	164
17-Oct	0.89	232.89	43.59	11.72	56.7	161
18-Oct	1.65	198.05	40.35	11.00	63.3	155
19-Oct	1.87	218.36	41.38	9.40	81.7	98
20-Oct	0.97	227.43	36.19	9.93	66.1	139
21-Oct	0.95	238.00	41.42	10.88	56.4	156
22-Oct	0.98	227.67	37.17	10.05	60.7	152
23-Oct	1.01	216.20	34.91	9.61	61.6	140
24-Oct	0.86	209.15	44.07	9.78	60.5	139
25-Oct	2.27	240.67	39.39	9.60	67.2	136
26-Oct	1.32	219.49	32.11	7.77	89.4	27
27-Oct	1.63	239.79	36.04	7.16	80.8	102
28-Oct	1.78	213.42	49.81	7.79	81.1	109

Daily Average Meteorological Data

Pit 1 Forebay

Daily Average Values						
Date	Wind			Air Temp (°C)	Relative Humidity (%)	Solar Radiation (Watts/m ²)
	Speed (mph)	Direction (degrees)	Sigma (s*)			
29-Oct	1.19	225.06	49.61	7.73	77.3	123
30-Oct	0.75	165.04	46.40	4.70	79.2	137
31-Oct	0.70	183.91	38.67	7.33	70.1	135