CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

Total Maximum Daily Load Report For Pathogens In:

Five-Mile Slough, Lower Calaveras River, Mormon Slough, Mosher Slough, Smith Canal and Walker Slough

FINAL STAFF REPORT
APPENDIX A
UNPUBLISHED WATER QUALITY DATA

March 2008

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Bill Jennings, Deltakeeper Letter
With Stockton Data

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DeltaKeeper

A PROJECT OF SAN FRANCISCO BAYKEEPER

14 May 2001

Mr. Jerry Bruns
Chief, Standards, Policies, and Special Studies Section
Mr. Joe Karkoski
303(d) List Update Coordinator
Central Valley Regional Water Quality Control Board
3443 Routier Road, Suite A
Sacramento, CA 95827-3003

RE: DeltaKeeper Comments on Section 303(d) List Update.

Dear Messrs. Bruns and Karkoski:

Thank you for the opportunity to provide information to support the update of the Section 303(d) List as required by the federal Clean Water Act. These comments are submitted on behalf of DeltaKeeper, WaterKeepers Northern California and the California Sportfishing Protection Alliance. (hereinafter "DeltaKeeper"). DeltaKeeper appreciates the considerable work that staff has accomplished in updating the list of waterbodies that will fail to meet water quality standards even if point sources are regulated.

1. The San Francisco-Sacramento-San Joaquin Bay Delta Estuary has been described as one of the most "invaded" estuaries in the world with respect to introduction of exotic, non-native species. During the last 303(d) update, the San Francisco Regional Board listed San Francisco Bay as impaired because of exotic species. Non-native species are considered a "pollutant" under the federal Clean Water Act. Clearly, the Sacramento-San Joaquin Delta should be listed as impaired, because of exotic species, on the 303(d) list. We reference: Nonindigenous Aquatic Species in a United States Estuary; A Case Study of the Biological Invasions of the San Francisco Bay and Delta; A Report for the United States Fish and Wildlife Service; Andrew N. Cohen and James T. Carlton; 1995. We also reference a number of articles in the Interagency Ecological Program for the Sacramento-San Joaquin Delta Newsletter including: Vol. 13 No. 4, Freshwater Invasion of *Euryemora affinis* and Vol. 13, No. 3, Reproduction in the Chinese Mitten Crabs; Vol. 13, No. 1, Recent Historical Evidence of Centrachid Increases and Tule Perch Decrease in the Delta (p. 23) and Examining the Relative Predation Risks of Juvenile Chinook Salmon in Shallow Habit: The Effect of Submerged Aquatic Vegetation (p. 57); Vol. 12 No. 2, Long-term Trends in Mysid

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Shrimp and Zooplankton; Vol. 12, No. 4, Fall 1999, More Non-indigenous Species? First Records of one Amphipod and Two Isopods in the Delta: Vol. 12, No. 1, What is the Impact of the Introduced Brazilian Waterweed *Egeria densa* to the Delta Ecosystem?; Vol. 10. No 3, neomysis/Zooplankton Abundance; Vol. 10, No. 1, Chinese Mitten Crabs in the Delta; Vol. 9, No. 4, Invasion of the Estuary by Oriental and European Crabs.

2. Recent monitoring has increased our understanding of the magnitude and extent of mercury impairment. The following waterbodies should be added to the list as impaired because of mercury: Consumes River, Mokelumne River, Calaveras River, San Joaquin River, Stanislaus River, Merced River, Tuolumne River, Mud Slough, Lindsey Slough, Minor Slough, Sacramento Ship Channel. We reference 1) Delta Wetlands Restoration and the Mercury Question: Year 2 Findings of the CALFED UC Davis Delta Mercury Study by Darell G. Slotton, Thomas H. Suchanek, and Shaun M. Ayers as reported in IEP Newsletter, Vol. 13, No. 4, Fall 2000 and 2) Contaminant Concentrations in Fish from the Sacramento-San Joaquin Delta and Lower San Joaquin River by Jay A. Davis and Michael D. May, San Francisco Estuary Institute, 1998.

Lake Englebright, Scotts Flat Reservoir, Rollins Reservoir, Lake Combie, Camp Far West Reservoir, and the South Yuba River, Deer Creek and Bear River should be added as impaired because of mercury contamination based on mercury concentrations in fish tissue. We reference; Mercury Bioaccumulation in Fish in a Region Affected by Historic Gold Mining: The South Yuba River, Deer Creek, and Bear River Watersheds, California, 1999 by Jason T. May, Roger L. Hothem, Charles N. Alpers and Matthew A. Law, USGS Open File Report 00-367.

Black Butte Reservoir should be listed as impaired because of mercury contamination based on concentrations in fish tissue. We reference: a) Prevalence of Selected Target Chemical Contaminants in Sport Fish From Two California Lakes: Public health Designed Screening Study, Final Project Report, by Robert K. Brodberg and Gerald A. Pollock, June 1999, Pesticide and Environmental Toxicology Section, Office of Environmental Health Hazard Assessment, Cal. EPA and the Draft Evaluation of Potential Health Effects of eating Fish From Black Butte Reservoir (Glenn and Tehama Counties) and b) Guidelines For Sport Fish Consumption, Pesticide and Environmental Toxicology Section, Office of Environmental Health Hazard Assessment, Cal. EPA.

3. Concentrations of Dieldrin in fish caught in the Sacramento River exceed screening values that led to consumption advisories in San Francisco Bay. Consequently, the Sacramento River should be listed as impaired because of Dieldrin. We reference: Contaminant Concentrations in Fish from the Sacramento-San Joaquin Delta and Lower San Joaquin River by Jay A. Davis and Michael D. May, San Francisco Estuary Institute, 1998.

4. Significant PCB contamination exceeding values that led to consumption advisories in San Francisco Bay has been identified in the Sacramento River, North and South Delta, and Smith

Canal. Extremely high concentrations of PCBs have been documented in Smith Canal. Accordingly, these waterbodies should be listed as impaired. We reference: Contaminant Concentrations in Fish from the Sacramento-San Joaquin Delta and Lower San Joaquin River by Jay A. Davis and Michael D. May, San Francisco Estuary Institute, 1998.

5. Over the last five years, DeltaKeeper has continued monitoring Stockton area waterways following storms. This monitoring continued a Regional Board investigation of urban runoff in 1994-95. Accordingly, the Calaveras River, Smith Canal, Mormon Slough and French Camp Slough should be added as impaired because of diazinon and chlorpyrifos. We reference: Review of the City of Stockton Urban Stormwater Runoff Aquatic Life Toxicity Studies Conducted by the CVRWQCB, DeltaKeeper and the University of California, Davis, Aquatic Toxicology Laboratory between 1994 and 2000 by G. Fred Lee, PhD, DEE and Anne Jones-Lee, PhD, April 2001. This report is attached to these comments.

6. Over the last five years, DeltaKeeper has monitored Stockton area waterways following storms. The data demonstrates that severe, prolonged dissolved oxygen sags occur in local waterways after rainfall. DeltaKeeper staff and volunteers have been trained by CVRWQCB and SWRCB staff and DeltaKeeper's QA/QC has been approved by the SWRCB. Accordingly, Mosher Slough, Five-Mile Slough, the Calaveras River, Smith Canal, Mormon Slough and French Camp Slough should be listed as impaired because of low dissolved oxygen caused by urban runoff. We reference: Dissolved Oxygen Depletion in the Stockton Sloughs, Report prepared for DeltaKeeper by G. Fred Lee & Associates, August 2000. Additional data collected in the Fall of 2000 by DeltaKeeper. This information is attached to these comments. We also reference: Stockton Fish Kills Associated With Urban Storm Runoff: The Role Of Low Dissolved Oxygen, a report prepared for the Regional Water Quality Control Board, June 1998, by Valerie Connor (Regional Board) and Karen Larsen, Kristy Cortright, Pacienca Young, Linda Deanovic and David Hinton (UCD) and Application of Stockton's Water Quality Model to Evaluate Stormwater Impact on Smith Canal, a report prepared for the City of Stockton by Carl W. Chen, Wangteng Tsai, Systech Engineering, February 1999. The Regional Board has a copy of these reports.

7. Over the last year, DeltaKeeper has been monitoring bacteria levels (total coliform and *e-coli*) in local waterways and throughout the Delta. DeltaKeeper staff was trained by USEPA (Richmond Laboratory). Staff and volunteers have been trained by SWRCB staff. CVRWQCB and SWRCB staff have joined DeltaKeeper on several collection trips. SWRCB staff, at the request of CVRWQCB staff, analyzed DeltaKeeper data, collection and analytical methods. Data was found to be acceptable and conservative. Results demonstrate routine exceedance of Region 5 Basin Plan standards, USEPA Ambient Water Quality Criteria for Bacteria, USEPA Great Lakes Freshwater Standard, the California Code of Regulations and proposed bacteria standards by the California Department of Health Services. The data are attached to these comments. Accordingly, Mosher

Slough, Five-Mile Slough, Calaveras River, Smith Canal, Mormon Slough, French Camp Slough, Lower San Joaquin River and Delta waterways should be listed as impaired because of bacteria.

8. Review of the Summary Statistics for Monitoring Data: SRWP, USGS NAWQA, Sacramento River CMP and City of Redding contained in Appendix F of the 1998-99 Annual Monitoring Report of the Sacramento River Watershed Program reveals that copper, lead, zinc, arsenic, nickel, cadmium, turbidity, phosphorus, giardia, iron, manganese, sodium and specific conductance exceed relevant criteria. The Regional Board has a copy of this report.

a. Copper: The Sacramento watershed monitoring data shows that maximum ambient concentration of total copper is 14.5 µg/l. The minimum hardness of the river is 19 mg/l at Freeport. Based on this hardness value, the acute and chronic criteria for copper are 2.8 µg/l and 2.2 µg/l, respectively. These differences become even more significant when compared to ambient concentrations of dissolved metals. The ambient concentration of dissolved copper exceeds both the acute and chronic copper criterion. The Sacramento River has no remaining assimilative capacity for copper - dissolved or total.

b. Lead: The Sacramento watershed monitoring data reveals that the maximum ambient concentration of total lead is 3.0 µg/l and dissolved lead is 0.5 µg/l. The minimum river hardness is 19 mg/l at Freeport. The chronic aquatic life criteria for lead at this hardness value is 0.4 µg/l. The Sacramento River has no remaining assimilative capacity for lead - dissolved or total.

c. Zinc: The Sacramento River monitoring data shows that the maximum ambient concentration of total zinc is 29 µg/l at Freeport (and 52 µg/l at River Mile 44). Dissolved zinc has been reported as high as 27 µg/l. At 19 mg/l hardness, the acute and chronic criteria for zinc are both 29.0 µg/l. These differences become significant when compared to the ambient concentrations of dissolved zinc which, at 27 µg/l, almost exceeds both the acute and chronic criterion of 29 µg/l. Considering that Regional Board studies have established that copper and zinc are additive, there is no question that zinc is present at toxic levels.

d. Arsenic: The Sacramento watershed monitoring data reports that dissolved arsenic concentration at Freeport has been as high as 2.0 µg/l and total arsenic has been found at 3.6 µg/l. Total arsenic is reported as high as 3.07 µg/l at River Mile 44. Arsenic is a bioaccumulative compound and it is inappropriate to adjust to percent dissolved. Arsenic at Freeport and River Mile 44 exceeds the USEPA Integrated Risk Information System (IRIS) Reference Dose as a Drinking Water Level of 2.1 µg/l and various one-in-a-million criteria including; the Cal/EPA Cancer Potency Factor as a Drinking Water Level of 0.023 µg/l , the USEPA IRIS of 0.02 µg/l and the USEPA Drinking Water Health Advisory or SNARL of 0.02 µg/l. The Sacramento River is clearly impaired because of arsenic.

e. Nickel: The Sacramento watershed monitoring data shows that total nickel was detected at Freeport at 18 µg/l and at River Mile 44 at 17 µg/l. Using the EPA conversion factor of 0.998 and a hardness value of 19 mg/l, nickel exceeds the chronic aquatic life criteria.

f. Cadmium: The Sacramento watershed monitoring data reports total cadmium as high as 0.35 µg/l at Freeport and 0.37 µg/l at River Mile 44. Dissolved cadmium concentrations are reported at 0.04 µg/l at both Freeport and River Mile 44, These concentrations exceed the Cal/EPA Cancer Potency Factor as a Drinking Water Level of 0.023 µg/l.

g. Turbidity: The Sacramento watershed monitoring data shows that turbidity of 45.2 NTU at Freeport and 53.4 at River Mile 44 exceed the California Department of Health Services Secondary MCL of 5 NTU and the USEPA Primary MCL of 1.0/0.5/0.3 NTU.

h. Phosphorus: The Sacramento watershed monitoring data demonstrates that phosphorus concentrations at Freeport of 0.21 mg/l (210 µg/l) and 1.09 mg/l (1,090 µg/l) at River Mile 44 exceed the USEPA Integrated Risk Information System (IRIS) Reference Dose as a Drinking Water Level of 0.14 µg/l and the USEPA Drinking Water Health Advisory or Suggested No-Adverse-Response Level (SNARL) for toxicity other than cancer risk of 0.1 µg/l.

i. Giardia. The Sacramento watershed monitoring data shows that concentrations of giardia at Freeport ranged between 9.3 and 30.6 cysts/100 L. We suspect this is above levels that are identified as causing impairment.

j. Coliform: The Sacramento watershed monitoring data shows that total coliform in the American River at Discovery Park exceeds both the fecal and total coliform criteria.

k. Iron and Manganese: The Sacramento watershed monitoring data shows that iron in Arcade Creek of 360 µg/l exceeds the Secondary MCL for iron. Concentrations of dissolved manganese at 106 µg/l exceed the Secondary MCL of 50 µg/l.

l. Sodium: The Sacramento watershed monitoring data shows sodium concentrations at Freeport as high as 11.0 mg/l (11000 µg/l). This concentration exceeds the USEPA Drinking Water Health Advisory or Suggested No-Adverse-Response Level (SNARL) for toxicity other than cancer risk of 2000 µg/l. Indeed, almost all of the monitored waterways (Yuba, Feather Arcade Creek, etc.) exceeded sodium at even the 50th or 75 median percentile.

m. Specific Conductance: Sacramento watershed monitoring shows that Colusa Basin Drain levels of EC ranged as high as 765 µmhos/cm (90th percentile of 714 µmhos/cm) These exceed the agricultural water quality goal of 700 µmhos/cm.

9. Review of the City of Stockton's Ambient Water Quality Monitoring Program on the San Joaquin River (Bowman Road, above the POTW) reveals that copper, lead, arsenic, turbidity, phosphorus, ammonia, coliform and conductivity exceed relevant criteria. Minimum river hardness is 38 mg/l. The Regional Board has a copy of this data.

a. Copper: Total copper concentrations ranged as high as 7.2 µg/l. Other copper concentrations were 7.0 µg/l, 6.4 µg/l, 5.4 µg/l, and 4.5 µg/l. At a hardness of 40 mg/l, the chronic criteria is 4.1 µg/l and the acute criteria is 5.7 µg/l. In fact, in July 1995, the ambient concentration of copper was 7 µg/l at a hardness of 38 mg/l. Using the conversion factor contain in the California Toxics Rule and the State Implementation Plan, the copper concentration exceeds both acute and chronic aquatic life criteria. Consequently, the San Joaquin River has no remaining assimilative capacity for copper.

b. Arsenic: Total arsenic concentrations ranged as high as 4.4 µg/l with other reported levels of 3.7 µg/l and 3.0 µg/l. Arsenic is a bioaccumulative compound and it is inappropriate to adjust to percent dissolved. Arsenic in the San Joaquin River exceeds the USEPA Integrated Risk Information System (IRIS) Reference Dose as a Drinking Water Level of 2.1 µg/l and various one-in-a-million criteria including; the Cal/EPA Cancer Potency Factor as a Drinking Water Level of 0.023 µg/l , the USEPA IRIS of 0.02 µg/l and the USEPA Drinking Water Health Advisory or SNARL of 0.02 µg/l. The San Joaquin River is clearly impaired because of arsenic.

c. Lead: Total lead concentrations ranged as high as 3.5 µg/l. Other lead concentrations are reported at 1.4 µg/l, 1.3 µg/l and 1.2 µg/l. The chronic aquatic life criteria for lead is at a hardness of 40 mg/l is 0.92 µg/l. The San Joaquin River is clearly impaired because of chronic concentrations of lead.

d. Bis (2-ethylhexyl) phthalate: Concentrations of bis (2-ethylhexyl) phthalate were found at 15 µg/l and 23 µg/l. The California Primary MCL is 4 µg/l. The USEPA Primary MCL is 6 µg/l. Various one-in-a-million criteria including; the Cal/EPA Cancer Potency Factor as a Drinking Water Level of 12 µg/l , the USEPA IRIS of 3 µg/l and the USEPA Drinking Water Health Advisory or SNARL of 3 µg/l were exceeded. The San Joaquin River is imparied because of bis (2-ethylhexyl) phthalate.

e. Phosphorus. Total phosphorus concentrations were as high as .39 mg/l (390 µg/l) and .37 mg/l (370 µg/l). Dissolved phosphorus concentrations were as high as 0.29 mg/l (290 µg/l). These exceed the USEPA Integrated Risk Information System (IRIS) Reference Dose as a Drinking Water Level of 0.14 µg/l and the USEPA Drinking Water Health Advisory or Suggested No-Adverse-Response Level (SNARL) for toxicity other than cancer risk of 0.1 µg/l.

f. Conductivity: EC levels at Bowman Road ranged as high as 821 mg/l, 828 mg/l and 1026 mg/l. The specific conductance agricultural goal is 700. We identify EC because it has been suggested that EC impairment on the San Joaquin River doesn't extend to Stockton.

g. Turbidity: Turbidity is reported as 57, 42, 45, 39, etc. Units are reported as mg/l. Frankly, we are not sure how this translates to NTUs, but suspect the turbidity criteria is exceeded.

h. Ammonia: Ammonia was found as high as 1.8 mg/l. San Joaquin River temperatures have been reported as high as 28 C (82.4 F). The pH has been reported as high as 8.22. The San Joaquin River has a reasonable potential to exceed the chronic aquatic life criteria for ammonia.

i. Coliform: As our attached data on total coliform concentrations demonstrates, the river exceeds the criteria for total coliform.

10. The American River (Sacramento County), San Joaquin River, Tuolumne River and Merced River should be listed for simazine. We reference Water Woes; An Analysis of Pesticide Concentrations in California Surface Water by Teresa M. Olle, Stephan Orme and Brad Heavner, California Public Interest Research Group and Pesticide Action Network, 2000. The report was based on an analysis of the Department of Pesticide Regulation's Surface Water Database. Simazine interacts synergistically with OP pesticides and these waterways are already listed for diazinon. The Regional Board has a copy of this report.

11. Avena Drain: Avena Drain receives stormwater runoff and illegal dumping of dairy wastes. Regional Board files are pregnant with data on EC and ammonia concentrations in Avena Drain (check with Louie Pratt). We have attached coliform data showing that the Drain is impaired because of coliform. We have also attached a number of field parameter monitoring data sheets that demonstrate that EC levels are regularly above criteria. Avena Drain must be identified as impaired because EC and coliform concentrations caused by discharges dairy wastes.

12. The Mokelumne River should be listed for unknown toxicity. In 1991-1992 Val Connor (Regional Board staff) and Linda Deavonic (UCD) found unknown toxicity to fathead minnows during part of a Basin Metals Implementation Plan project. That information was report in 1994. More recently, DeltaKeeper found unknown toxicity to fathead minnows during a CalFed funded study of toxicity in the Delta (Sacramento-San Joaquin Delta Toxicity Test Monitoring Report: 1998-99. The Final Report For DeltaKeeper by the Aquatic Toxicology Laboratory, University California, Davis). The Regional Board has both of these reports.

During low water cycles, resuspension events in Camanche Reservoir cause high concentrations of metals and turbidity to be discharged into the Lower Mokelumne River. While

much has been accomplished in eliminating the major (but not the only) source of metals to Camanche Reservoir, a heavy metal sink behind Camanche Dam remains. The Mokelumne River listings for copper and zinc should be maintained. In addition, the river should be listed for aluminum, cadmium, low dissolved oxygen, turbidity and temperature. During an eight day evidentiary hearing by the State Water Resources Control Board in 1992, East Bay Municipal Utility District was required to provide data on metals sampling in the Mokelumne River. We are including that data, a report on Mokelumne River water quality by State Board staff and the USFWS final briefing document to that hearing. We also reference DFG's Lower Mokelumne River Fisheries Management Plan that is at the Regional Board.

13. Inexplicably, the Pitt River is the only river in the entire Central Valley identified as impaired because of temperature. Yet, inadequate temperature, caused by altered flow regimes and increased loading of high temperature, has been identified as one of the major reasons for the decline of fisheries throughout the Central Valley. Data on inadequate temperatures can be found in numerous documents including, but not limited to; the CalFed EIR/EIS, the Restoration Plan for the Anadromous Fish Restoration Program of the Central Valley Project Improvement Act, the DFG's Lower Mokelumne River Fisheries Management Plan (November 1991), the State Water Board's Bay-Delta Hearing, Mokelumne River and Yuba River Hearing records and various EIR/EISs conducted by the Federal Energy Regulatory Commission including those on the Tuolumne, Mokelumne, Yuba and Feather rivers. Additional evidence can be found in the findings of various Regional Board issued NPDES permits.

For example; the CalFed EIR/EIS states that the mainstem of the San Joaquin River between the Merced River confluence and Vernalis in the fall and spring often exceed stressful or lethal levels for upstream and downstream migrating fall-run chinook salmon. When the Vernalis flow is 5,000 cfs or less in May, water temperatures are at levels of chronic stress. Increased water temperature is identified as one of principal causes of declining chinook salmon populations in the San Joaquin River in the September 1998 EIR/EIS titled Meeting Flow Objectives for the San Joaquin River Agreement 1999-2010 (VAMP Agreement). The City of Stockton's Ambient Water Quality Monitoring Program on the San Joaquin River (in Regional Board files) shows that temperatures during the September migration of chinook salmon reach 74.3 F (23.5 C).

The CalFed EIR/EIS states that "[i]n late April and May, stream temperature often exceeds stressful levels for emigrating smolts (Merced River)" and "[r]esults of the stream temperature modeling study indicate that in May, and at times in late April, smolts emigrating from the Tuolumne River encounter stressful or lethal water temperatures... new schedules will not ease temperature problems,... especially in the lower portion of the river..." and that flows in the Stanislaus River "... exceed critical temperatures for salmon spawning and egg incubation.."

The CalFed EIR/EIS states that in the American River, temperatures in summer and fall are often "above 70 F." With respect to the Sacramento River, the CalFed EIR/EIS observes that high temperatures "cause the loss of many adult salmon and eggs spawned in the river." For Delta channels, the CalFed EIR/EIS observes that "[d]uring spring and fall, Delta channels are used by anadromous fish for migrating between rivers and the Pacific Ocean and are used as rearing areas as well Untimely high water temperatures stress migrating fish by delaying their movement or by causing mortality."

Finding No. 32 of the Sacramento Regional Wastewater Treatment Facility NPDES permit states that "[s]tudies by the National Marine Fisheries Service and the U.S. Bureau of Reclamation have identified the Sacramento Chinook Salmon as a species that is affected by elevated temperatures in the Sacramento River. There are adults and juveniles in portions of the River every month of the year. Juvenile salmon show signs of adverse effects at River temperatures of 65 F. Migration of adults is usually delayed when River temperatures reach 70 F. At 72 F, adult mortality may occur." The February 1998 Thermal Plan Compliance Report by Sacramento Regional County Sanitation District (part of the hearing record) shows that the Sacramento River exceeds 65 F: 49.2% of the time between April-June, 99.9% of the time between July-August and 38.6% of the time between September-November. The report shows that the River exceeds 69 F; 24.5% of the time between April-June, 92.8% of the time between July-August and 18.5% of the time between September-November.

State Water Board Decision 1644, Decision Regarding Protection of Fishery Resources and Other Issues Relating to Diversion and Use of Water From the Lower Yuba River, conclusively establishes that the Yuba River exceeds criteria for temperature. Indeed, the State Board decision states that "[t]he SWRCB recognizes that compliance with requirements to provide suitable water temperatures year-round for all lifestages of chinook salmon and steelhead is not feasible in the lower Yuba River." The Yuba River must be listed as impaired because of temperature to ensure that additional loadings of high temperature do not occur.

Waterbodies that have been identified as having temperatures above acute or stressful levels include, but are not limited to: the San Joaquin River, Stanislaus River, Merced River, Tuolumne River, Calaveras River, Mokelumne River, Bear River, Sacramento River, Yuba River, Feather River, Colusa Basin Drain, American River, Clear Creek and Deer Creek.

During previous 303(d) List updates, Regional Board staff have made only minimal effort to identify waterways impaired by temperature. In previous 303(d) update submittals, resource agencies have identified numerous waterways as impaired because of high temperatures. Virtually all Central Valley waterways below major impoundments are identified Critical Habitat for species listed pursuant to state and federal Endangered Species Acts. Virtually all of these same waterways

are identified as having temperatures above levels that are protective of salmonids. Regional Board staff can no longer ignore the enormous degradation cause by excessive temperatures. They must make a concerted effort to identify and list temperature impaired waterways.

14. There are several other waterways that have been identified as impaired during development of NPDES permits. Deer Creek (tributary to the Consumes River) is impaired because of coliform and temperature (see Richard McHenry). Morrison Creek (Sacramento) is impaired because of temperature (see Patricia Leary).

Thank you for this opportunity to comment on the revised 303(d) list update. If you have any questions regarding these comments, please feel free to contact me (209) 464-5090.

Sincerely,

Bill Jennings

and the remaining two (8%) of the replicates for *E. coli* were within ½ of an order of magnitude of each other.

Discussion

In general DeltaKeeper has been conscientious and diligent in pursuing high quality results in their coliform monitoring program. They have of course proceeded along a sharp learning curve in a short period of time, but have independently developed procedures that have yielded data of acceptable quality. Many of their results may in fact be considered conservative, possibly under-representing the coliform counts in the Delta.

In order to perform a brief review of the results, the field sample results assigned to Appendix A were removed from the data set, and the five duplicates performed by Far West Laboratories were added. This list of valid sample results is given in Appendix D. A review yielded some interesting observations (see Figure 1). For total coliform, approximately 88% of the results are equal to or greater than 1000 MPN/100ml and 73% of the results are equal to or greater than 2419 MPN/100ml (2419 MPN/100ml is the maximum detection limit for samples on which no dilution was performed). It is obvious that total coliform bacteria were found at elevated levels in the Delta waterways throughout the sampling period. It is commonly known that delta and estuarine environments are rich in heterotrophic bacteria, and that the sediments are fine grained and rich in organic matter. Such sediments provide an optimum environment for heterotrophic bacteria. Human activity such as vessel traffic may act to distribute sediments and bacteria into the water column on a frequent basis. This, in combination with contaminated runoff, may be contributing to the high total coliform counts in surface water in the Delta.

For *E. coli* 39% of the results are equal to or greater than 120 MPN/100ml, 12% of the results are equal to or greater than 1000 MPN/100ml, and 9% of the results are equal to or greater than 2419 MPN/100ml. There does not appear to be a strong relationship between *E. coli* and total coliform levels. While total coliform bacteria levels are usually very high, *E. coli* levels are only elevated occasionally. In other words, most of the total coliform bacteria are not *E. coli.*

A majority of the elevated *E. coli* results were from samples collected on or after October 11, which corresponds to the beginning of the rainy period (the first significant rainfall of the fall of 2000 in Stockton was recorded by the National Weather Service on October 10). A few other elevated *E. coli* results immediately followed a late spring precipitation event occurring on May 6-8 (0.57 inches). While there were certainly many *E. coli* results that were not elevated during the rainy periods, most of the elevated results did occur during the wet season. This indicates that elevated *E. coli* levels may be associated with runoff following rain events, which is consistent with *E. coli* pollution in other urbanized areas in California.

frequency and record keeping associated with the blanks has varied as the program developed. According to DeltaKeeper, at first the blanks were performed inconsistently and were poorly recorded. Initially the blanks were not recorded at all, but beginning in June the blanks were recorded on the Water Quality Field Logs. Beginning on October 23 the blanks were recorded electronically in their electronic database. The frequency of performing blanks also improved. From October 23 through November 17 there were blanks performed during eight of the 16 sampling days. From November 20 through the 6th of December blanks were performed on every sampling day.

According to DeltaKeeper the coliform bacteria were not detected in any of blanks performed prior to October 23, 2000. (A review of all the Water Quality Field Logs from that period was not performed, so this cannot be absolutely confirmed.) Upon a review of their data from October 23 through December 6, coliform bacteria were not detected in any of the blanks (i.e., coliform bacteria were "Non-Detect"). The results of three blanks were recorded as 0 (zero). However, these zeros (Non-Detects) should have been more correctly recorded as <1 MPN/100ml for 1:1 dilutions, and <10 MPN/100ml for 1:10 dilutions. In addition, for one of these blanks (Oct. 30) the dilution was recorded as "1" which brings into question what actual dilution was used (1:1 or 1:10). These blanks, while incorrectly recorded, still represent valid results, and are identified in Appendix C. The October 23 blank was held at an incubation temperature 0.1 C higher than allowable, but still resulted in a non-detect for coliform bacteria. A slight increase in the allowable temperature would most likely have resulted in the presence of positive wells if coliform bacteria were present (or false positives). Since this blank had no positive wells, while obviously flawed, it still maintains some validity and was therefore not deleted from the data set.

Positive Controls

Positive controls are those that contain known cultures of coliform bacteria. The use of positive controls gives assurance that the results are not under-representing the actual coliform levels determined from analyzing the samples. No positive controls were performed.

Replicate Samples

It is generally recommended that one laboratory duplicate be run daily on a minimum of 5% - 10% of the field samples. Laboratory replicates are sub-samples from the same field sample. If there are two lab replicates (i.e., the sample is sub-sampled twice) then these are referred to as laboratory duplicates. DeltaKeeper did not perform laboratory duplicates. Instead they collected replicates in the field. These field replicates (also commonly referred to simply as replicates) are defined as being separate samples taken at the same time and place but analyzed separately. When there are only two replicate samples, these are referred to as duplicate samples.

QA Assessment of DeltaKeeper Coliform Monitoring
Dominic Gregorio and Heather Perry, State Water Resources Control Board
March 2001

Introduction

DeltaKeeper initiated coliform bacteria monitoring in April of 2000 at various locations throughout the San Joaquin Delta in the vicinity of Stockton. Dominic Gregorio and Dominic Roques of the SWRCB previously met with and accompanied Bill Jennings of DeltaKeeper on a sampling effort in May 25, 2000. On November 17, 2000 Dominic Gregorio met again with Bill Jennings, as well as John Lovelady and Matt Berube at their Stockton facility. He later spoke with Matt Berube in a telephone conversation on Dec. 22, 2000. DeltaKeeper provided the coliform bacteria results from 309 samples that they analyzed from over 70 San Joaquin River Delta locations, 15 duplicates performed by a commercial laboratory (Far West Laboratories), and 17 quality control blanks. The following is an assessment of the procedures employed by DeltaKeeper in producing that data.

Analytical Method, SOP, and QAPP

DeltaKeeper employs the IDEXX Company's enzyme substrate coliform test (Colilert). This procedure is described in Method 9223 in *Standard Methods for the Examination of Water and Wastewater*, 20th Edition, 1998. This single method results in two endpoints, one for total coliform and the other for *E. coli.*

It should be noted that the other two procedures commonly used by many other laboratories are the membrane filtration and multiple tube fermentation methods. Both of these analyses result in a fecal coliform endpoint, as opposed to an *Eschericia coli (E. coli)* endpoint. *E. coli* represents the major population within the fecal coliform group of organisms, but there are other minor constituent species that are fecal coliform bacteria. Therefore, *E. coli* and fecal coliform results, while obviously related, are not completely synonymous. The IDEXX procedure is specific for *E. coli.*

The specific field and laboratory procedures employed by DeltaKeeper have evolved as described in this assessment. According to DeltaKeeper personnel these procedures have been recorded, in an on-going manner, in a draft Standard Operating Procedure (SOP). A copy of their draft SOP has been requested, but has not yet received by the SWRCB.

DeltaKeeper has an approved Quality Assurance Project Plan (QAPP) for the Stockton Urban Waterways Monitoring, performed under contract to the Central Valley Regional Water Quality Control Board. Coliform sampling and analysis, however, were not covered in their QAPP. Since DeltaKeeper has been performing coliform sampling and analysis with independent funding, and because coliform sampling/analysis is not covered under the Urban Waterways contract, there is no requirement that their QAPP include reference to coliform sampling and analysis.

retires to his quarters upstairs of the lab to sleep. The incubator temperatures are monitored hourly using an erasable board for each incubation period, and an incubation temperature is also recorded electronically for each sample. Upon review of the recorded data, 97% of the samples (including blanks) were incubated within ± 0.5 ° C of the recommended incubation temperature of 35 ° C. Only ten of the samples and one blank were incubated outside of the allowable range and these are identified in Appendix A.

The IDEXX test results in two endpoints, one for total coliform and the other for *E.coli*. The numbers of wells which are positive (yellow for total coliform, yellow and fluorescent for *E. coli*) are counted and that number is used to determine the most probable number (MPN) per 100 ml from a statistically derived table provided by IDEXX. When dilutions are performed the most probable number (MPN) results from the table are then multiplied by the dilution factor to determine the final MPN/100ml endpoint.

DeltaKeeper verbally stated that when performing the analyses of quantitrays, certain wells displayed color development that matched the yellow color of the comparator (provided by IDEXX) but did not exceed the comparator (in terms of the intensity of the yellow color); DeltaKeeper did not consider these positive wells. In other words, only wells with a more intense yellow color than the comparator were considered by DeltaKeeper to be positive wells for total coliform. The IDEXX Company recommends counting those cells matching or exceeding the comparator as being positive for total coliform bacteria. Therefore the DeltaKeeper procedure has occasionally resulted in an undercount of positive wells and the resulting MPN/100 ml results were recorded as being lower than the actual MPN.

On the spreadsheet provided by DeltaKeeper the negative (non-detect) results for 14 field samples were recorded as 0 (zero). However, these zeros should have been more correctly recorded as <10 MPN/100ml for 1:10 dilutions, <20 MPN/100ml for 1:20 dilutions, and <50 MPN/100ml for 1:50 dilutions. One other non detect sample, with a 1:10 dilution, was incorrectly recorded as <1 MPN/100ml (it should have been recorded as <10 MPN/100ml). An error was also discovered for the November 14 sample at Sacramento River @ Rio Vista Launch Ramp. The dilution was 1:10 but the result was given as 3.1 MPN/100ml. This result should have instead been recorded as 31 MPN/100ml. These samples, while incorrectly recorded, still represent valid results, and are all identified in Appendix B.

DeltaKeeper archives hard copies of their completed Water Quality Field Log forms. The information from these data sheets is entered and maintained in an electronic format (MS Excel). All of the data which was reviewed for this report, with the exception of five duplicates analyzed on September 20 by Far West Laboratories, was obtained from the Excel spreadsheet provided by DeltaKeeper. DeltaKeeper also provided the results of the five Far West duplicates in hard copy form only (lab results).

Here are some suggestions for further work. DeltaKeeper has limited resources; however, there may be ways in which State and Regional Board staff would be able to collaborate with DeltaKeeper on some of these suggestions.

1. Continue to correlate coliform levels with rainfall.

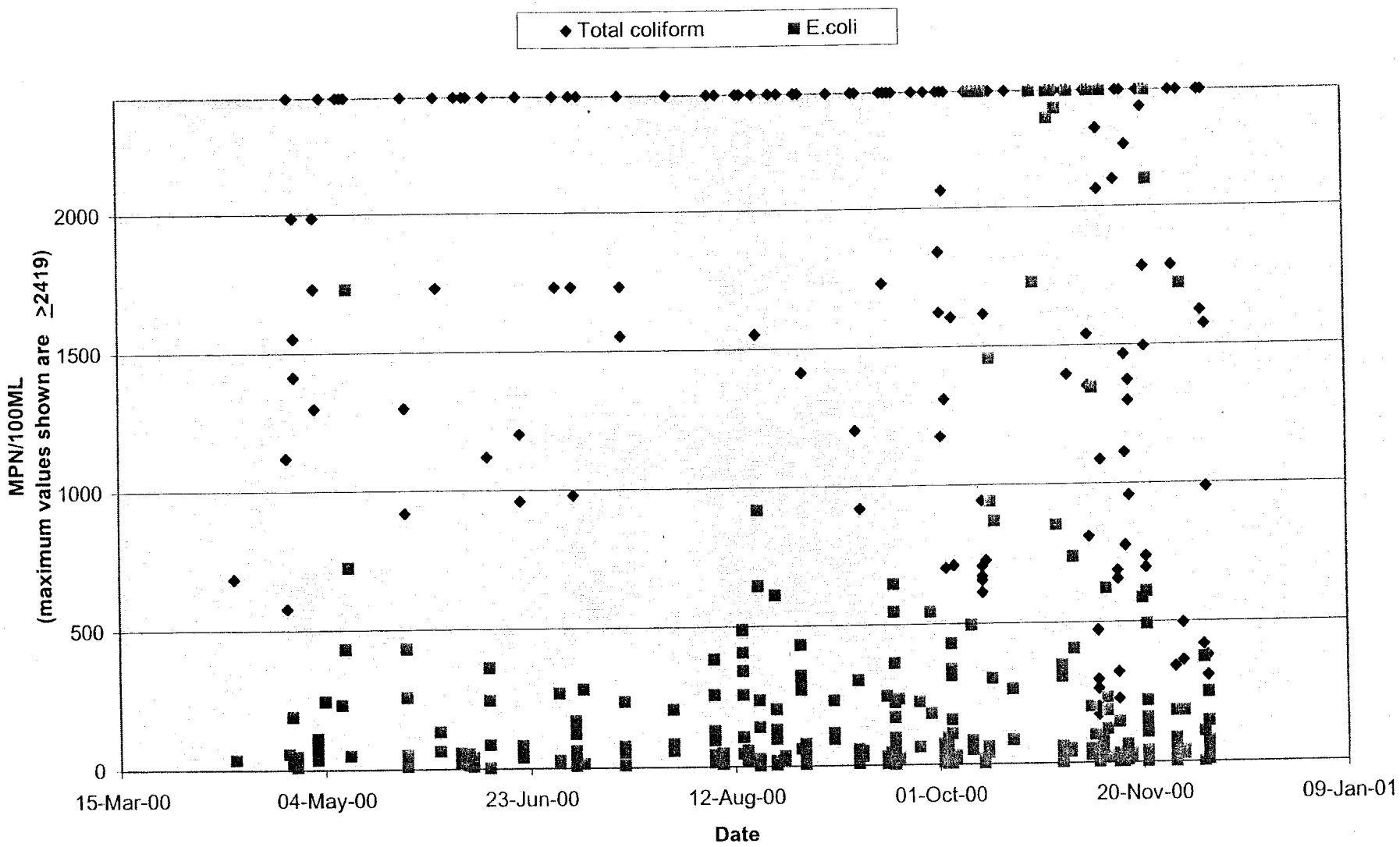
2. Many of the results had associated tidal information; if samples were collected throughout a single tidal cycle (four samples per 24 hour period) at upstream and downstream sites in different locations in the Delta it would be interesting to correlate coliform levels with tides.

3. DeltaKeeper also performs a variety of other water quality measures (e.g., dissolved oxygen, conductivity, etc.) throughout the Delta; it would be interesting to compare the other tested parameters to coliform result.

4. Some sites had many samples taken, while other sites had very few. For data analysis purposes, those sites with scarce sampling results are not as useful as the sites with a more consistent time series of samples. In order to conserve resources it may be better to limit sampling to fewer sites but maintain a frequent sampling program at those sites.

5. Another thing to consider is the use of a randomized sampling approach, possibly performed on a seasonal basis. While this approach may not necessarily indicate specific problem sites, it would give a better overall picture of Delta water quality with regard to coliform bacteria.

Figure 1. DeltaKeeper Coliform Data



APPENDIX A
INVALID RESULTS

SAMPLES WITH INCOMPLETE OR CONTRADICTORY TRANSPORT & INCUBATION TIMES

Date	Location	Sample ID#	Notes
12-Jun-00	Mosher Slough @ Sandman Pk	DK12600-MS-1-RK	Collection time is recorded as being after Incubator start time
17-Aug-00	MUD Outfall @ San Joaquin Rvr	COL170800MUDO-JL1	Time not recorded for the end of the incubation period
24-Aug-00	Downtown Marina @Stockton Deep	COL240800DTNM-MB1	No collection time recorded; therefore, no value for travel time
19-Sept-00	Mossdale Marina @ San Joaquin River	COL190900MOSM-MB1	No collection time recorded; therefore, no value for travel time
2-Oct-00	Turner Cut	COL021000TURC-MB1	No collection time recorded; therefore, no value for travel time
17-Oct-00	San Joaquin R @ Port Stockton	COL141000SJPS-MB1	Collection time is recorded as being after Incubator start time
30-Oct-00	Walker Slough @ Manthey Rd	COL301000WALM-MB1	No collection time recorded; therefore, no value for travel time

SAMPLES EXCEEDED 22 HOURS MAXIMUM INCUBATION

Date	Location	Incubation time
10-May-00	5 mile Slough @ Plymouth	23 hours
12-Jun-00	Mosher Slough @ Sandman Pk	22 hours, 45 minutes
6-Jul-00	Windmill Cove	24 hours
19-Oct-00	5 mile Slough @ Plymouth	22 hours , 10 minutes
19-Oct-00	Calaveras R @ UOP Bridge	22 hours , 10 minutes
19-Oct-00	Mormon Slough @ Lincoln St	22 hours , 10 minutes
19-Oct-00	Smith Canal @ Yosemite Lk	22 hours , 10 minutes
19-Oct-00	Walker slough @ Turnpike Rd	22 hours , 10 minutes
19-Oct-00	Mosher Slough @ Kelley Drive	22 hours , 10 minutes

FIELD SAMPLES WITH INCUBATION TEMP OUTSIDE OF ALLOWABLE RANGE (35C ±0.5)

Date	Location	Sample ID #	Temp
14-Sep-00	Tiki Lagoon	COL140900TIKL-SP1	36.0
14-Sep-00	Turner Cut	COL140900TURC-SP1	36.0
14-Sep-00	Turner Cut	COL140900TURC-SP2	36.0
17-Oct-00	Lost Isle	COL171000LOSI-MB1	36.0
17-Oct-00	King Island Resort	COL171000KGIR-MB1	36.0
17-Oct-00	San Joaquin at Port	COL171000SJPS-MB1	36.0
17-Oct-00	Morelli Park	COL171000MLIP-MB1	36.0
23-Oct-00	French Camp Slough	COL231000FRCS-MB1	35.6
23-Oct-00	MUD Outfall	COL231000MUDO-MB1	35.6
23-Oct-00	McLeod Lake	COL231000MCCL-MB1	35.6

SAMPLES WITH NO RESULTS

Date	Location	Sample ID #
01-Jun-00	Windmill Cove	DK1600-WC-1-RK

APPENDIX D

VALID RESULTS SAMPLED BY DELTAKEEPER, AND ANALYZED BY DELTAKEEPER OR FAR WEST LABS

Note: Results sorted by site. Results are in MPN/100ml. Bold results indicate total coliform $\geq$ 1000 MPN and *E.coli* $\geq$ 120 MPN.

Date	Site	Total coliform	*E.coli*
26-Apr-00	5 Mile at Alexandria	**2419.17**	24.6
07-Aug-00	5 Mile at Alexandria	**>2419.2**	15.8
07-Aug-00	5 Mile at Plymouth	**2419.17**	33.6
14-Aug-00	5 Mile at Plymouth	**>2419.2**	47.1
18-Aug-00	5 Mile at Plymouth	**>2419.2**	5.2
22-Aug-00	5 Mile at Plymouth	**2419.17**	7.4
28-Aug-00	5 Mile at Plymouth	**>2419.2**	61.3
20-Sep-00	5 Mile at Plymouth	**>2419**	3
20-Sep-00	5 Mile at Plymouth	**>2419.2**	10.9
04-Oct-00	5 Mile at Plymouth	**>24,192.0**	0
10-Oct-00	5 Mile at Plymouth	**>24,192.**	**11,198.50**
11-Oct-00	5 Mile at Plymouth	**>48,384**	**>48,384**
30-Oct-00	5 Mile at Plymouth	**64,982.50**	**855**
11-Nov-00	5 Mile at Plymouth	**3,130**	20
21-Nov-00	5 Mile at Plymouth	738	0
21-Nov-00	5 Mile at Plymouth	697	20
28-Nov-00	5 Mile at Plymouth	341.00	0
05-Dec-00	5 Mile at Plymouth	419.00	0
03-Nov-00	Avena Drain at Brennan Rd.	**>241,920**	**410**
03-Nov-00	Avena Drain at Carrolton Rd	**>241,920**	**61,310**
25-Oct-00	Avena Drain at Carrolton Rd.	**>2419.2**	**>2419.2**
08-Nov-00	Avena Drain at Carrolton Rd.	**>241,920**	**15,650**
25-Oct-00	Avena Drain at Jack Tone Rd.	**>2419.2**	**1732.87**
03-Nov-00	Avena Drain at Jack Tone Rd.	**38,730**	**740**
25-Oct-00	Avena Drain at Murphy Rd.	**>2419.2**	**>2419.2**
03-Nov-00	Avena Drain at Murphy Rd.	**>241,920**	**3,540**
08-Nov-00	Avena Drain at Murphy Rd.	**141,360**	100
03-Nov-00	Avena Drain at Van Allen Rd.	**>241,920**	**3,770**
08-Nov-00	Avena Drain at Van Allen Rd.	**241,917**	**1,350**
05-Dec-00	Bear Creek at Thornton Rd.	**5,172.00**	**374**
14-Nov-00	Beaver Slough at Blossom Road	323	0
07-Nov-00	Bethany Reservoir State Rec. Area	**1,354**	**203**
09-Nov-00	Bethel Island @ Russo's Marina	201	10
09-Nov-00	Bethel Island @ Russo's	171	20

18-Aug-00	Downtown Marina	**1553.07**	0
05-Sep-00	Downtown Marina	**>2419.2**	**235.9**
11-Sep-00	Downtown Marina	**1203.31**	58.8
18-Sep-00	Downtown Marina	**>2419.2**	**248.1**
05-Oct-00	Downtown Marina	712	31
19-Oct-00	Downtown Marina	**17,328.70**	**269**
21-Nov-00	Downtown Marina	**1,785.00**	**132**
15-Aug-00	Dredger cut	**>2419.2**	58.8
09-Nov-00	Dutch Slough @ Bethel Island	472	0
06-Dec-00	Fourteen Mile at Feather River Drive	309	74
04-Jul-00	Fourteen Mile Slough	**>2419.2**	**162.4**
16-Jul-00	Fourteen Mile Slough	**>2419.2**	71.2
09-Aug-00	Fourteen Mile Slough	**>2419.2**	25.3
09-Aug-00	Fourteen Mile Slough	**>2419.2**	35
12-Sep-00	Fourteen Mile Slough	**>2419.2**	52.9
21-Sep-00	Fourteen Mile Slough	**>2419.2**	24.3
02-Nov-00	Fourteen Mile Slough	**2,481**	52
11-Sep-00	French Camp Slough	**>2419.2**	**307.6**
26-Sep-00	French Camp Slough	**15,530.70**	**226**
09-Oct-00	French Camp Slough	**12,033.10**	**496**
31-Oct-00	French Camp Slough	**7,335**	0
07-Nov-00	Grant Line Canal	809	30
19-Sep-00	Haven Acres	**>2419.2**	6.3
04-Jul-00	Herman & Helens	**>2419.2**	21.3
12-Oct-00	Herman & Helens	614	0
12-Oct-00	Herman & Helens	672	0
13-Oct-00	Herman & Helens	728	40
14-Oct-00	Herman & Helens	**20,924.80**	**942**
13-Jun-00	King Island Resort	**1,119.85**	4.1
04-Jul-00	King Island Resort	980.4	14.3
29-Aug-00	King Island Resort	**1,413.60**	21.3
03-Oct-00	King Island Resort	703	<1
07-Nov-00	Lazy M Marina	**1,541**	50
25-Apr-00	Lincoln Village West	579.4	58.5
02-May-00	Lincoln Village West	**1299.65**	113.9
24-May-00	Lincoln Village West	**1299.65**	29.8
01-Jun-00	Lincoln Village West	**1732.87**	**137.4**
13-Jun-00	Lincoln Village West	**2419.17**	**365.4**
21-Jun-00	Lincoln Village West	**1203.31**	83.9
30-Jun-00	Lincoln Village West	**1732.87**	28.8
04-Jul-00	Lincoln Village West	**>2419.2**	**125.9**
16-Jul-00	Lincoln Village West	**1553.07**	78.4
29-Aug-00	Lincoln Village West	**>2419.2**	75.9
12-Sep-00	Lincoln Village West	920.8	32.4
21-Sep-00	Lincoln Village West	**>2419.2**	**238.2**

03-Oct-00	Lincoln Village West	**4611**	52
02-Nov-00	Lincoln Village West	**1,396**	52
10-Nov-00	Lincoln Village West	**2,282.00**	84
30-Nov-00	Lincoln Village West	364	30
30-Jun-00	Lost Isle	**>2419.2**	23.1
04-Jul-00	Lost Isle	**1732.87**	64.5
24-Aug-00	McLeod Lake	**>2,419.2**	22.8
05-Oct-00	McLeod Lake	**1,607.00**	20
19-Oct-00	McLeod Lake	**5,172.00**	86
29-Oct-00	McLeod Lake	**>120,960**	**2,600**
29-Oct-00	McLeod Lake	**>120,960**	**2,955**
31-Oct-00	McLeod Lake	**>120,960**	**2,355**
30-Nov-00	McLeod Lake	**7,701.00**	**185**
14-Nov-00	Mokelumne at B & W	657	31
12-Oct-00	Morelli Park	**>48,384**	**31,061.40**
13-Oct-00	Morelli Park	**>48,384**	**19,608**
14-Oct-00	Morelli Park	**48,384.00**	**1,456**
15-Oct-00	Morelli Park	**24,066.20**	**870**
29-Oct-00	Morelli Park	**>120,960**	**2,320**
31-Oct-00	Morelli Park	**14,545**	**350**
10-Nov-00	Morelli Park	**2,063**	52
30-Nov-00	Morelli Park	496	41
06-Jun-00	Mormon at Lincoln	**>2419.2**	21.6
08-Jun-00	Mormon at Lincoln	**>2419.2**	34.5
09-Jun-00	Mormon at Lincoln	**>2419.2**	17.5
07-Aug-00	Mormon at Lincoln	**>2419.2**	40
14-Aug-00	Mormon at Lincoln	**>2419.2**	**344.8**
18-Aug-00	Mormon at Lincoln	**>2419.2**	**648.8**
22-Aug-00	Mormon at Lincoln	**>2419.2**	**613.1**
28-Aug-00	Mormon at Lincoln	**>2419.2**	**325.5**
20-Sep-00	Mormon at Lincoln	**>2419**	47
20-Sep-00	Mormon at Lincoln	**>2419.2**	74.9
29-Sep-00	Mormon at Lincoln	**19,862.80**	**546**
04-Oct-00	Mormon at Lincoln	**8664**	**161**
11-Oct-00	Mormon at Lincoln	**>48,384**	**>48,384**
30-Oct-00	Mormon at Lincoln	**>120,960**	**40,820**
11-Nov-00	Mormon at Lincoln	**19,862.80**	**624**
21-Nov-00	Mormon at Lincoln	**5,475**	**156**
21-Nov-00	Mormon at Lincoln	**5,794**	**160**
22-Nov-00	Mormon at Lincoln	**>24,192.0**	**>24,192.0**
06-Dec-00	Mormon at Lincoln	**1,576**	**146**
11-Oct-00	Mosher @ Mariners	**>48,384**	**48,383.40**
30-Oct-00	Mosher @ Mariners	**>120,960**	**3,540**
09-May-00	Mosher @ Sandman	**>2419.2**	**435.2**
08-May-00	Mosher at Kelley	**>2419.2**	**236.1**
24-May-00	Mosher at Kelley	**>2419.2**	**435.2**

29-Aug-00	Paradise Point Marina	**>2,419.2**	79.8
03-Oct-00	Paradise Point Marina	**1,313**	0
07-Aug-00	Pock lane	**>2419.2**	103.9
12-Oct-00	Potato Slough	658.00	0
08-Jun-00	S.J. River at Beach	**>2419.2**	14.8
09-Jun-00	S.J. River at Beach	**>2419.2**	24
11-Sep-00	S.J. River at Beach	**>2419.2**	7.4
30-Nov-00	S.J.R. at Navy Drive	**15,530.70**	**1,723.00**
14-Nov-00	Sacramento R. at Rio Vista Boat Launch	689	3.1
17-Nov-00	San Joaquin River at French Camp Slough	**1,301.00**	20
27-Apr-00	Smith @ I-5	**1413.6**	49.6
10-May-00	Smith @ I-5	**>2419.2**	**727**
06-Jun-00	Smith @ I-5	**>2419.2**	58.3
08-Jun-00	Smith @ I-5	**>2419.2**	57.3
09-Jun-00	Smith @ I-5	**>2419.2**	43.9
21-Jun-00	Smith @ I-5	960.6	44.8
06-Jul-00	Smith @ I-5	**>2419.2**	**285.1**
28-Jul-00	Smith @ I-5	**>2419.2**	86
07-Aug-00	Smith @ I-5	**>2419.2**	43.2
05-Sep-00	Smith @ I-5	**>2419.2**	117.8
10-May-00	Smith @ Pershing	**>2419.2**	**1732.87**
11-Oct-00	Smith @ Pershing	**>48,384**	**34,657.40**
30-Oct-00	Smith @ Pershing	**>120,960**	**6,980**
27-Apr-00	Smith at Yosemite	**1553.07**	49.6
07-Aug-00	Smith at Yosemite	**>2419.2**	**261.3**
14-Aug-00	Smith at Yosemite	**>2419.2**	**410.6**
18-Aug-00	Smith at Yosemite	**>2419.2**	**240**
22-Aug-00	Smith at Yosemite	**>2419.2**	98.8
28-Aug-00	Smith at Yosemite	**>2419.2**	**435.2**
20-Sep-00	Smith at Yosemite	**>2419**	**93**
20-Sep-00	Smith at Yosemite	**>2419.2**	**172.3**
29-Sep-00	Smith at Yosemite	**7,270**	**185**
04-Oct-00	Smith at Yosemite	**4611**	**432**
10-Oct-00	Smith at Yosemite	**>24,192.0**	**12,033.10**
11-Nov-00	Smith at Yosemite	**>24,192.0**	**4,611.00**
21-Nov-00	Smith at Yosemite	**6,867**	**495**
21-Nov-00	Smith at Yosemite	**17,329**	**612**
22-Nov-00	Smith at Yosemite	**>24,192.0**	**2,098.00**
28-Nov-00	Smith at Yosemite	**6,488.00**	41
06-Dec-00	Smith at Yosemite	**>24,192.**	**250**
14-Nov-00	South Fork Mokelumne At Westgate Landing	228	0
14-Nov-00	Sycamore at Guard Rd.	**2,098.00**	**146**
15-Aug-00	Telephone Cut	**>2419.2**	23.1

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	Site	Date	Collect time	Sample ID#	Start Temp	Start Time	Start Date	End Temp	End Time	End Date	Ratio	Large Wells Total	Small Wells Total	MPN total	Large Wells E. coli	Small Wells E. coli	MPN E. coli	Northing	Westing
2				Listing of Blanks that were run along with the samples															
3	Blank	10-Jan-00	13:00	COL100101BLNK-MB1	35.00	13:00	10-Jan-00	35.00	8:45	11-Jan-00	20:1	0	0	<20	0	0	<20		
4	Blank	11-Jan-00	17:00	COL110101BLNK-MB1	34.50	17:30	11-Jan-00	34.50	13:30	12-Jan-00	10:1	0	0	<10	0	0	<10		
5	Blank	12-Jan-00	10:45	COL120101BLNK-MB1	35.00	11:30	12-Jan-00	35.00	7:15	13-Jan-01	20:1	0	0	<20	0	0	<20		
6	Blank	23-Oct-00	10:50	COL231000BLNK-MB1	35.00	15:35	23-Oct-00	35.60	13:30	24-Oct-00	10:1	0	0	<10	0	0	<10		
7	Blank	30-Oct-00	16:45	COL301000BLNK-MB1	35.00	16:45	30-Oct-00	35.00	13:00	31-Oct-00	1:1	0	0	<1	0	0	<1		
8	Blank	02-Nov-00	11:25	COL021100BLNK-SH1	35.00	12:25	02-Nov-00	34.50	9:00	03-Nov-00	10:1	0	0	<10	0	0	<10		
9	Blank	07-Nov-00	13:00	COL071100BLNK-MB1	35.00	15:00	07-Nov-00	35.00	13:00	08-Nov-00	10:1	0	0	<10	0	0	<10		
10	Blank	09-Nov-00	12:50	COL091100BLNK-SH1	35.00	14:30	09-Nov-00	35.00	9:30	10-Nov-00	10:1	0	0	<10	0	0	<10		
11	Blank	10-Nov-00	12:00	COL101100BLNK-MB1	35.00	13:00	10-Nov-00	34.50	9:15	11-Nov-00	10:1	0	0	<10	0	0	<10		
12	Blank	11-Nov-00	10:44	COL111100BLNK-MB1	34.00	12:00	11-Nov-00	35.00	8:00	12-Nov-00	10:1	0	0	<10	0	0	<10		
13	Blank	14-Nov-00	12:45	COL141100BLNK-MB1	35.00	13:35	14-Nov-00	35.00	9:30	15-Nov-00	10:1	0	0	<10	0	0	<10		
14	Blank	15-Nov-00	11:20	COL151100BLNK-MB1	35.00	12:30	15-Nov-00	35.00	8:15	16-Nov-00	50:1	0	0	<50	0	0	<50		
15	Blank	16-Nov-00	10:30	COL161100BLNK-SH1	35.00	13:40	16-Nov-00	35.00	9:30	17-Nov-00	10:1	0	0	<10	0	0	<10		
16	Blank	20-Nov-00	10:45	COL201100BLNK-MB1	35.00	12:15	20-Nov-00	35.00	8:00	21-Nov-00	10:1	0	0	<10	0	0	<10		
17	Blank	21-Nov-00	10:25	COL211100BLNK-SH1	35.00	13:05	21-Nov-00	35.00	9:05	22-Nov-00	10:1	0	0	<10	0	0	<10		
18	Blank	22-Nov-00	10:40	COL221100BLNK-MB1	35.00	12:05	22-Nov-00	35.00	8:05	23-Nov-00	10:1	0	0	<10	0	0	<10		
19	Blank	28-Nov-00	11:30	COL281100BLNK-MB1	36.00	14:20	28-Nov-00	35.00	10:20	29-Nov-00	10:1	0	0	<10	0	0	<10		
20	Blank	30-Nov-00	14:00	DAI301100BLNK-MB1	35.00	14:45	30-Nov-00	35.00	10:45	01-Dec-00	10:1	0	0	<10	0	0	<10		
21	Blank	05-Dec-00	15:50	COL051200BLNK-MB1	35.00	16:45	05-Dec-00	35.00	12:45	06-Dec-00	10:1	0	0	<10	0	0	<10		
22	Blank	06-Dec-00	14:50	COL061200BLNK-MB1	35.00	15:30	06-Dec-00	35.00	11:30	07-Dec-00	10:1	0	0	<10	0	0	<10		
23	Blank	08-Jan-01	15:05	COL080101BLNK-MB1	35.00	16:10	08-Jan-01	35.00	12:00	09-Jan-01	10:1	0	0	<10	0	0	<10		
24	Blank	24-Jan-01	13:10	COL240101BLNK-MB1	35.00	14:00	24-Jan-01	35.00	9:30	25-Jan-01	10:1	0	0	<10	0	0	<10		
25	Blank	25-Jan-01	11:40	COL250101BLNK-MB1	35.00	13:20	25-Jan-01	35.00	9:00	26-Jan-01	10:1	0	0	<10	0	0	<10		
26	Blank	27-Jan-01	11:45	COL270101BLNK-MB1	34.00	12:00	27-Jan-01	35.00	8:00	28-Jan-01	10:1	0	0	<10	0	0	<10		
27	Blank	10-Feb-01	12:45	COL100201BINK-LC1	35.00	14:20	10-Feb-01	35.00	10:20	11-Feb-01	20:1	0	0	<20	0	0	<20		
28	Blank	11-Feb-01	13:20	COL110201BLNK-LC1	35.00	14:00	11-Feb-01	35.00	10:00	12-Feb-01	20:1	0	0	<20	0	0	<20		
29	Blank	02-Mar-01	15:38	COL020201BLNK-LC1	35.00	16:30	02-Mar-01	35.00	13:00	03-Mar-01	20:1	0	0	<20	0	0	<20		
30	Blank	14-Mar-01	15:15	COL140301BLNK-LC1	35.00	15:40	14-Mar-01	35.00	9:50	15-Mar-01	20:1	0	0	<20	0	0	<20		
31	Blank	20-Mar-01	12:40	COL200301BLNK-LC1	35.00	12:45	20-Mar-01	35.00	10:30	21-Mar-01	10:1	0	0	<20	0	0	<20		
32	Blank	26-Mar-01	13:30	COL260301BLNK-LC1	35.00	17:30	26-Mar-01	35.00	13:30	27-Mar-01	20:1	0	0	<20	0	0	<20		
33	Blank	12-Apr-01	13:25	COL120401BLNK-LC1	35.00	17:00	12-Apr-01	35.00	13:00	13-Apr-01	20:1	0	0	<1	0	0	<1		
34	Blank	21-Apr-01	15:50	COL210401BLNK-LC1	35.00	16:30	21-Apr-01	35.00	12:30	22-Apr-01	20:1	0	0	<20	0	0	<20		
35	Blank @ Turner Cut	21-Mar-01	11:00	COL210301BLNK-LC1	35.00	13:30	21-Mar-01	35.00	10:30	22-Mar-01	20:1	0	0	<20	0	0	<20		
36																			

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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	Site	Date	Collect time	Sample ID#	Start Temp	Start Time	Start Date	End Temp	End Time	End Date	Ratio	Large Wells Total	Small Wells Total	MPN total	Large Wells E. coli	Small Wells E. coli	MPN E. coli	Northing	Westing
37				List of Urban Sites around Stockton, CA															
38	Calaveras River @ DeltaKeeper's Dock	12-Apr-00	15:49	COL120400CLVR-SF	35.00	16:00	12-Apr-00	35.00	10:00	13-Apr-00	1:1	49	32	686.7	21	9	38.6		
39	Calaveras River @ DeltaKeeper's Dock	26-Apr-00	9:30	COL260400CLVR-RK	36.00	15:09	26-Apr-00	35.00	9:21	27-Apr-00	1:1	49	48	>2419.2	48	12	193.5		
40	Calaveras River @ DeltaKeeper's Dock	27-Apr-00	9:40	COL270400CLVR-RK	35.00	11:50	27-Apr-00	35.00	8:20	28-Apr-00	1:1	49	46	1986.28	9	1	10.1		
41	Calaveras River @ DeltaKeeper's Dock	10-May-00	18:00	COL100500CLVR-RK	35.00	18:20	10-May-00	35.00	14:30	11-May-00	1:1	49	48	>2419.2	31	3	51.2		
42	Calaveras River @ DeltaKeeper's Dock	24-May-00	10:49	COL240500CLVR-RK	36.00	11:15	24-May-00	35.50	8:30	25-May-00	1:1	49	48	>2419.2	49	15	261.3		
43	Calaveras River @ DeltaKeeper's Dock	01-Jun-00	11:10	COL010600CLVR-RK	35.00	11:30	01-Jun-00	35.00	7:10	02-Jun-00	1:1	49	48	>2419.2	31	11	65.1		
44	Calaveras River @ DeltaKeeper's Dock	21-Jun-00	15:15	COL210600CLVR-JF1	35.00	15:30	21-Jun-00	35.00	10:00	22-Jun-00	1:1	49	48	>2419.2	29	3	46.6		
45	Calaveras River @ DeltaKeeper's Dock	28-Jul-00	12:00	COL280700CLVR-JL1	35.00	12:30	28-Jul-00	35.00	9:30	29-Jul-00	1:1	49	48	>2419.2	24	5	75.3		
46	Calaveras River @ DeltaKeeper's Dock	18-Aug-00	14:49	COL180800CLVR-MB	35.00	15:00	18-Aug-00	35.00	11:30	19-Aug-00	1:1	49	48	>2419.2	21	0	26.5		
47	Calaveras River @ DeltaKeeper's Dock	12-Sep-00	11:20	COL120900CLVR-MB1	36.00	11:35	12-Sep-00	35.50	9:30	13-Sep-00	1:1	49	48	>2419.2	31	3	51.2		
48	Calaveras River @ DeltaKeeper's Dock	03-Oct-00	12:38	COL031000CLVR-MB1	35.00	13:52	03-Oct-00	34.50	10:00	04-Oct-00	10:1	47	17	2063	7	2	96	37*58.134'	121*21.337'
49	Calaveras River @ UOP footbridge	14-Aug-00	11:52	COL140800CLVR-JF1	35.50	13:40	14-Aug-00	35.00	9:40	15-Aug-00	1:1	49	48	>2419.2	42	8	107.6	37*58.884	121*18.841'
50	Calaveras River @ UOP footbridge	22-Aug-00	14:11	COL220800CLVR-JL	35.00	16:00	22-Aug-00	34.60	13:00	23-Aug-00	1:1	49	48	>2419.2	47	17	206.3		
51	Calaveras River @ UOP footbridge	28-Aug-00	11:40	COL280800CLVR-MB1	34.50	13:15	28-Aug-00	35.50	9:15	29-Aug-00	1:1	49	48	>2419.2	48	22	298.7		
52	Calaveras River @ UOP footbridge	20-Sep-00	10:55	COL200900CLVR-MB1	36.00	14:00	20-Sep-00	35.00	11:00	21-Sep-00	1:1	49	48	>2419.2	40	10	98.5		
53	Calaveras River @ UOP footbridge	20-Sep-00	10:55	COL200900CLVR-MB	35.00	13:30	20-Sep-00	35.00	13:30	21-Sep-00	1:1	outside	lab	>2419.2	outside	lab	50		
54	Calaveras River @ UOP footbridge	04-Oct-00	11:55	COL041000CLVR-MB1	35.50	13:30	04-Oct-00	35.00	9:30	05-Oct-00	10:1	49	30	6131	9	1	109	37*58.883'	121*18.838'
55	Calaveras River @ UOP footbridge	11-Oct-00	10:00	COL111000CLVR-DW1	35.00	14:00	11-Oct-00	35.00	9:30	12-Oct-00	20:1	49	48	>48384	49	45	34657.4		
56	Calaveras River @ UOP footbridge	19-Oct-00	15:55	COL191000CLVR-MB1	35.50	17:20	19-Oct-00	35.00	15:30	20-Oct-00	10:1	49	41	12033.1	6	2	84	37*58.882'	121*18.839'
57	Calaveras River @ UOP footbridge	30-Oct-00	14:59	COL301000CLVR-LC1	35.00	16:45	30-Oct-00	35.00	13:00	31-Oct-00	50:1	49	48	>120960	37	14	4670	37*58.884'	121*18.845'
58	Calaveras River @ UOP footbridge	11-Nov-00	11:00	COL111100CLVR-MB1	34.00	12:00	11-Nov-00	35.00	8:00	12-Nov-00	10:1	49	37	9208	9	2	120	37*58.878'	121*18.835'
59	Calaveras River @ UOP footbridge	21-Nov-00	9:30	COL211100CLVR-SH2	35.00	13:00	21-Nov-00	35.00	9:00	22-Nov-00	10:1	49	30	6131	7	3	107	37*58.888'	121*18.843'
60	Calaveras River @ UOP footbridge	21-Nov-00	9:30	COL211100CLVR-SH1	35.00	13:05	21-Nov-00	35.00	9:05	22-Nov-00	10:1	49	33	7270	3	0	31	37*58.888'	121*18.843'
61	Calaveras River @ UOP footbridge	28-Nov-00	11:50	COL281100CLVR-SH1	36.00	14:20	28-Nov-00	35.00	10:20	29-Nov-00	10:1	49	46	19862.8	14	0	185	37*58.884'	121*18.842'
62	Calaveras River @ UOP footbridge	06-Dec-00	13:40	COL061200CLVR-MB1	35.00	15:30	06-Dec-00	35.00	11:30	07-Dec-00	10:1	42	6	988	1	0	10	37*58.881'	121*18.838'
63	Calaveras River @ UOP footbridge	08-Jan-01	14:10	COL080101CLVR-MB1	35.00	16:10	08-Jan-01	35.00	12:00	09-Jan-01	10:1	49	48	>24192	49	12	2249	37*58.880'	121*18.843'
64	Calaveras River @ UOP footbridge	11-Jan-01	16:15	COL110101CLVR-MB1	34.50	17:30	11-Jan-01	34.50	13:30	12-Jan-01	10:1	49	48	>24192	41	9	1014		
65	Calaveras River @ UOP footbridge	24-Jan-01	12:10	COL240101CLVR-MB1	35.00	14:00	24-Jan-01	35.00	9:30	25-Jan-01	10:1	49	48	>24192	44	34	2507	37*58.875'	121*18.838'
66	Calaveras River @ UOP footbridge	10-Feb-01	11:40	COL100201CLVR-LC1	35.00	14:20	10-Feb-01	35.00	10:20	11-Feb-01	20:1	49	48	>48384	31	3	1024		
67	Calaveras River @ UOP footbridge	11-Feb-01	12:05	COL110201CLVR-LC1	35.00	14:00	11-Feb-01	35.00	10:00	12-Feb-01	20:1	49	48	>48384	35	14	1694		
68	Calaveras River @ UOP footbridge	05-Mar-01	14:32	COL050301CLVR-LC1	35.00	17:30	05-Mar-01	35.00	15:00	06-Mar-01	20:1	49	46	39725.6	49	23	8212		
69	Calaveras River @ UOP footbridge	14-Mar-01	13:07	COL140301CLVR-LC1	35.00	15:40	14-Mar-01	35.00	9:50	15-Mar-01	20:1	27	5	900	2	0	40		
70	Calaveras River @ UOP footbridge	20-Mar-01	10:27	COL200301CLVR-LC1	35.00	12:45	20-Mar-01	35.00	10:30	21-Mar-01	10:1	49	17	2909	6	0	63		
71	Calaveras River @ UOP footbridge	26-Mar-01	14:12	COL260301CLVR-LC1	35.00	17:30	26-Mar-01	35.00	13:30	27-Mar-01	20:1	49	48	>48384	39	8	1768	37*58.885'	121*18.840'
72	Calaveras River @ UOP footbridge	12-Apr-01	9:30	COL120401CLVR-LC1	35.00	17:00	12-Apr-01	35.00	13:00	13-Apr-01	20:1	49	36	17328	4	1	104		
73	Calaveras River @ UOP footbridge	21-Apr-01	13:12	COL210401CLVR-LC1	35.00	16:30	21-Apr-01	35.00	12:30	22-Apr-01	20:1	49	48	48384	31	11	1302		
74	Calaveras River @ UOP footbridge	07-Aug-01	13:06	COL070800CLVR-JL1	35.00	15:38	07-Aug-01	35.00	12:00	08-Aug-00	1:1	49	48	>2419.2	40	9	95.9	37*58.877'	121*18.838'
75	Five-Mile Slough @ Alexandria	26-Apr-00	13:30	COL260400FVML-RK	36.00	15:09	26-Apr-00	35.00	9:21	27-Apr-00	1:1	49	47	2419.17	19	1	24.6		
76	Five-Mile Slough @ Alexandria	07-Aug-00	12:45	COL070800FVML-JL2	35.00	15:38	07-Aug-00	35.00	12:00	08-Aug-00	1:1	49	48	>2419.2	12	2	15.8	38*00.744'	121*20.399'
77	Five-Mile Slough @ Alexandria	02-Feb-01	13:26	COL020201FVML-LC1	35.00	16:30	02-Feb-01	35.00	13:00	03-Feb-01	20:1	49	30	12262	11	0	244		
78	Five-Mile Slough @ Plymouth	10-May-00	15:10	COL100500FVML-RK	35.00	15:30	10-May-00	35.00	14:30	11-May-00	1:1	49	48	>2419.2	48	27	378.4		
79	Five-Mile Slough @ Plymouth	07-Aug-00	12:28	COL070800FVML-JL1	35.00	15:38	07-Aug-00	35.50	12:00	08-Aug-00	1:1	49	47	2419.17	22	4	33.6	38*00.829'	121*21.159'
80	Five-Mile Slough @ Plymouth	14-Aug-00	11:29	COL140800FVML-JF1	35.50	13:40	14-Aug-00	35.00	9:40	15-Aug-00	1:1	49	48	>2419.2	30	2	47.1	38*00.830'	121*21.160'
81	Five-Mile Slough @ Plymouth	18-Aug-00	14:00	COL180800FVML-JL	35.50	15:00	18-Aug-00	35.50	11:30	19-Aug-00	1:1	49	48	>2419.2	5	0	5.2		
82	Five-Mile Slough @ Plymouth	22-Aug-00	13:50	COL220800FVML-JL	35.00	16:00	22-Aug-00	34.60	13:00	23-Aug-00	1:1	49	47	2419.17	7	4	7.4		
83	Five-Mile Slough @ Plymouth	28-Aug-00	11:15	COL280800FVML-MB1	34.50	13:00	28-Aug-00	35.00	9:15	29-Aug-00	1:1	49	48	>2419.2	34	4	61.3		
84	Five-Mile Slough @ Plymouth	20-Sep-00	10:25	COL200900FVML-MB1	36.00	14:00	20-Sep-00	35.00	11:00	21-Sep-00	1:1	49	48	>2419.2	9	1	10.9		
85	Five-Mile Slough @ Plymouth	04-Oct-00	11:25	COL041000FVML-MB1	35.00	13:30	04-Oct-00	35.00	9:30	05-Oct-00	10:1	49	48	>24192	0	0	<10	38*00.824'	121*21.178'
86	Five-Mile Slough @ Plymouth	10-Oct-00	16:30	COL101000FVML-MB1	35.50	17:10	10-Oct-00	35.00	13:10	11-Oct-00	10:1	49	48	>24192	49	40	11198.5		
87	Five-Mile Slough @ Plymouth	11-Oct-00	9:30	COL111000FVML-DW1	35.00	14:00	11-Oct-00	35.00	9:30	12-Oct-00	20:1	49	48	>48384	49	48	>48384	38*00.824'	121*21.234
88	Five-Mile Slough @ Plymouth	19-Oct-00	15:30	COL191000FVML-MB1	35.50	17:20	19-Oct-00	35.00	15:30	20-Oct-00	10:1	49	38	9804	15	3	211	38*00.823'	121*21.226'
89	Five-Mile Slough @ Plymouth	30-Oct-00	14:20	COL301000FVML-MB1	35.00	16:45	30-Oct-00	35.00	13:00	31-Oct-00	50:1	49	42	64982.5	13	2	855	38*00.826'	121*21.229'
90	Five-Mile Slough @ Plymouth	11-Nov-00	10:35	COL111100FVML-MB1	34.00	12:00	11-Nov-00	35.00	8:00	12-Nov-00	10:1	48	23	3130	2	0	20	38*00.824'	121*21.219'
91	Five-Mile Slough @ Plymouth	21-Nov-00	9:10	COL211100FVML-SH1	35.00	13:05	21-Nov-00	35.00	9:05	22-Nov-00	10:1	36	5	697	2	0	20	38*00.823'	121*21.234'

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	Site	Date	Collect time	Sample ID#	Start Temp	Start Time	Start Date	End Temp	End Time	End Date	Ratio	Large Wells Total	Small Wells Total	MPN total	Large Wells E. coli	Small Wells E. coli	MPN E. coli	Northing	Westing
92	Five-Mile Slough @ Plymouth	21-Nov-00	9:10	COL211100FVML-SH2	35.00	13:00	21-Nov-00	35.00	9:00	22-Nov-00	10:1	36	7	738	0	0	<10	38*00.823'	121*21.234'
93	Five-Mile Slough @ Plymouth	28-Nov-00	10:40	COL281100FVML-SH1	36.00	14:20	28-Nov-00	35.00	10:20	29-Nov-00	10:1	23	3	341	0	0	<10	38*00.821'	121*21.231'
94	Five-Mile Slough @ Plymouth	05-Dec-00	16:05	COL051200FVML-MB1	35.00	16:45	05-Dec-00	35.00	12:45	06-Dec-00	10:1	27	3	419	0	0	<10	38*00.825'	121*21.232'
95	Five-Mile Slough @ Plymouth	08-Jan-01	13:15	COL080101FVML-MB1	35.00	16:10	08-Jan-01	35.00	12:00	09-Jan-00	10:1	49	48	>24192	49	33	7270	38*00.819'	121*21.233'
96	Five-Mile Slough @ Plymouth	10-Jan-01	16:30	COL100101FVML-MB1	35.00	17:30	10-Jan-01	35.00	13:30	11-Jan-00	10:1	49	48	>24192	49	46	19862		
97	Five-Mile Slough @ Plymouth	24-Jan-01	11:45	COL240101FVML-MB1	35.00	14:00	24-Jan-01	35.00	9:30	25-Jan-01	10:1	49	48	>24192	24	7	416.0	38*00.826'	121*21.163'
98	Five-Mile Slough @ Plymouth	27-Jan-01	10:15	COL270101FVML-MB1	34.00	12:00	27-Jan-01	35.00	8:00	28-Jan-01	10:1	49	22	3873	12	1	146	38*00.829'	121*21.160'
99	Five-Mile Slough @ Plymouth	10-Feb-01	11:15	COL100201FVML-LC1	35.00	14:20	10-Feb-01	35.00	10:20	11-Feb-01	20:1	49	40	22397	9	0	196		
100	Five-Mile Slough @ Plymouth	11-Feb-01	11:45	COL110201FVML-LC1	35.00	14:00	11-Feb-01	35.00	10:00	12-Feb-01	20:1	49	42	15996	29	2	896		
101	Five-Mile Slough @ Plymouth	05-Mar-01	13:57	COL050301FVML-LC1	35.00	17:30	05-Mar-01	35.00	15:00	06-Mar-01	20:1	49	47	48383.4	24	2	34.5		
102	Five-Mile Slough @ Plymouth	14-Mar-01	12:34	COL140301FVML-LC1	35.00	15:40	14-Mar-01	35.00	9:50	15-Mar-01	20:1	49	37	18416	16	5	500		
103	Five-Mile Slough @ Plymouth	20-Mar-01	10:00	COL200301FVML-LC1	35.00	12:45	20-Mar-01	35.00	10:30	21-Mar-01	10:1	48	21	2851	1	0	10		
104	Five-Mile Slough @ Plymouth	26-Mar-01	13:40	COL260301FVML-LC1	35.00	17:30	26-Mar-01	35.00	13:30	27-Mar-01	20:1	49	48	>48384	43	10	2356		
105	Five-Mile Slough @ Plymouth	12-Apr-01	10:15	COL120401FVML-LC1	35.00	17:00	12-Apr-01	35.00	13:00	13-Apr-01	20:1	49	42	25993	2	2	82		
106	Five-Mile Slough @ Plymouth	21-Apr-01	12:31	COL210401FVML-LC1	35.00	16:30	21-Apr-01	35.00	12:30	22-Apr-01	20:1	49	48	48,384	41	14	2320		
107	McCleod Lake	24-Aug-00	10:22	COL240800MCCL-DW1	35.00	12:00	24-Aug-00	35.50	9:00	25-Aug-00	1:1	49	48	>2419.2	17	2	22.8		
108	McCLeod Lake	05-Oct-00	10:35	COL051000MCCL-SH1	35.00	12:00	05-Oct-00	35.00	9:15	06-Oct-00	10:1	47	10	1607	2	0	20	37*57.305	121*17.670
109	McCLeod Lake	19-Oct-00	11:35	COL191000MCCL-MB1	35.00	12:30	19-Oct-00	35.00	8:00	20-Oct-00	10:1	49	27	5172	8	0	86	37*57.326'	121*17.680'
110	McCLeod Lake	23-Oct-00	12:00	COL231000MCCL-MB1	35.00	15:35	23-Oct-00	35.60	13:30	24-Oct-00	10:1	49	47	24191.7	12	7	216	37*57.387'	121*17.590'
111	McCLeod Lake	29-Oct-00	7:10	COL291000MCCL-MB1	35.00	7:40	29-Oct-00	35.00	5:20	30-Oct-00	50:1	49	48	>120960	30	5	2600		
112	McCLeod Lake	29-Oct-00	7:10	COL291000MCCL-MB2	35.00	7:40	29-Oct-00	35.00	5:20	30-Oct-00	50:1	49	48	>120960	32	6	2955		
113	McCLeod Lake	31-Oct-00	10:15	COL311000MCCL-SH1	35.00	13:00	31-Oct-00	35.00	10:40	01-Nov-00	50:1	49	48	>120960	30	2	2355	37*57.354'	121*17.579'
114	McCLeod Lake	30-Nov-00	9:15	COL301100MCCL-MB1	35.00	11:50	30-Nov-00	35.00	9:00	01-Dec-00	10:1	49	34	7701	14	2	185	37*57.332'	121*17.572'
115	McCLeod Lake	02-Feb-01	14:20	COL020201MCCL-LC1	35.00	16:30	02-Feb-01	35.00	13:00	03-Feb-01	20:1	49	48	>48384	49	17	5818		
116	McCLeod Lake	07-Mar-01	10:20	COL070301MCCL-LC1	35.00	13:15	07-Mar-01	35.00	10:30	08-Mar-01	20:1	49	38	19608	28	1	790		
117	McCLeod Lake	15-Mar-01	12:20	COL150301MCCL-LC1	35.00	14:30	15-Mar-01	35.00	9:30	16-Mar-01	20:1	49	31	12976	5	0	104		
118	McCLeod Lake	22-Mar-01	11:00	COL220301MCCL-LC1	35.00	12:50	22-Mar-01	35.00	9:50	23-Mar-01	10:1	30	1	439	1	0	10		
119	McCLeod Lake	26-Mar-01	14:55	COL260301MCCL-LC1	35.00	17:30	26-Mar-01	35.00	13:30	27-Mar-01	20:1	49	48	>48384	43	11	2422	37*57.367'	121*17.564'
120	McCLeod Lake	12-Apr-01	10:10	COL120401MCCL-LC1	35.00	17:00	12-Apr-01	35.00	13:00	13-Apr-01	20:1	49	30	12262	3	1	82		
121	Morelli Park	12-Oct-00	15:50	COL121000MRLL-MB1	35.00	17:30	12-Oct-00	35.00	13:30	13-Oct-00	20:1	49	48	>48384	49	44	31061.4	37*57.173'	121*18.386'
122	Morelli Park	13-Oct-00	12:00	COL131000MRLL-MB1	35.00	13:55	13-Oct-00	35.00	10:00	14-Oct-00	20:1	49	48	>48384	49	38	19608	37*57.181'	121*18.385'
123	Morelli Park	14-Oct-00	16:50	COL141000MRLL-MB1	35.00	17:20	14-Oct-00	35.00	14:45	15-Oct-00	20:1	49	47	48384	34	10	1456		
124	Morelli Park	15-Oct-00	9:30	COL151000MRLL-MB1	35.00	9:30	15-Oct-00	35.00	7:00	16-Oct-00	20:1	49	41	24066.2	27	4	870		
125	Morelli Park	17-Oct-00	16:30	COL171000MRLL-MB1	33.50	17:25	17-Oct-00	36.00	14:45	18-Oct-00	10:1	49	43	14136	21	1	278	37*57.183'	121*18.358'
126	Morelli Park	29-Oct-00	7:00	COL291000MRLL-MB1	35.00	7:40	29-Oct-00	35.00	5:20	30-Oct-00	50:1	49	48	>120960	29	3	2320		
127	Morelli Park	31-Oct-00	10:40	COL311000MRLL-SH1	35.00	13:00	31-Oct-00	35.00	10:40	01-Nov-00	50:1	49	17	14545	7	0	350	37*57.179'	121*18.388'
128	Morelli Park	10-Nov-00	11:45	COL101100MRLL-MB1	35.00	13:00	10-Nov-00	34.50	9:15	11-Nov-00	10:1	47	17	2063	5	0	52	37*57.143'	121*18.369'
129	Morelli Park	30-Nov-00	9:30	COL301100MRLL-MB1	35.00	11:50	30-Nov-00	35.00	9:00	01-Dec-00	10:1	29	5	496	4	0	41	37*57.184'	121*18.381'
130	Morelli Park	02-Feb-01	14:40	COL020201MRLL-MB1	35.00	16:30	02-Feb-01	35.00	13:00	03-Feb-01	20:1	49	10	4092	17	0	406		
131	Morelli Park	07-Feb-01	10:45	COL070201MRLL-LC1	35.00	13:15	07-Feb-01	35.00	10:30	08-Feb-01	20:1	49	19	6510	16	3	452		
132	Morelli Park	15-Mar-01	12:45	COL150301MRLL-LC1	35.00	14:30	15-Mar-01	35.00	9:30	16-Mar-01	20:1	27	6	930	3	0	62		
133	Morelli Park	22-Mar-01	10:30	COL220301MRLL-LC1	35.00	12:50	22-Mar-01	35.00	9:50	23-Mar-01	10:1	18	1	231	0	1	10		
134	Morelli Park	12-Apr-01	10:25	COL120401MRLL-LC1	35.00	17:00	12-Apr-01	35.00	13:00	13-Apr-01	20:1	49	19	6,510	3	0	62		
135	Mormon Slough @ Lincoln	06-Jun-00	10:55	COL060600MRMN-RK	36.00	11:30	06-Jun-00	35.50	9:30	07-Jun-00	1:1	49	48	>2419.2	17	1	21.6		
136	Mormon Slough @ Lincoln	08-Jun-00	10:42	COL080600MRMN-RK	35.00	11:45	08-Jun-00	35.00	9:00	09-Jun-00	1:1	49	48	>2419.2	24	2	34.5		
137	Mormon Slough @ Lincoln	09-Jun-00	10:55	COL090600MRMN-RK1	35.00	11:45	09-Jun-00	35.00	9:30	10-Jun-00	1:1	49	48	>2419.2	15	0	17.5		
138	Mormon Slough @ Lincoln	07-Aug-00	14:05	COL070800MRMN-JL1	35.00	15:38	07-Aug-00	35.00	12:00	08-Aug-00	1:1	49	48	>2419.2	21	10	40	37*56.862'	121*17.787'
139	Mormon Slough @ Lincoln	14-Aug-00	12:30	COL140800MRMN-JF1	35.50	13:40	14-Aug-00	35.00	9:40	15-Aug-00	1:1	49	48	>2419.2	49	20	344.8	37*56.862'	121*17.790'
140	Mormon Slough @ Lincoln	18-Aug-00	14:30	COL180800MRMN-JF	35.50	15:00	18-Aug-00	35.00	11:30	19-Aug-00	1:1	49	48	>2419.2	49	31	648.8		
141	Mormon Slough @ Lincoln	22-Aug-00	14:38	COL220800MRMN-JL	35.00	16:00	22-Aug-00	34.60	13:00	23-Aug-00	1:1	49	48	>2419.2	49	30	613.1		
142	Mormon Slough @ Lincoln	28-Aug-00	12:15	COL280800MRMN-LC1	34.50	13:15	28-Aug-00	35.00	9:15	29-Aug-00	1:1	49	48	>2419.2	49	19	325.5		
143	Mormon Slough @ Lincoln	20-Sep-00	11:45	COL200900MRMN-MB1	36.00	14:00	20-Sep-00	35.00	11:00	21-Sep-00	1:1	49	48	>2419.2	38	4	74.9		
144	Mormon Slough @ Lincoln	29-Sep-00	11:25	COL290900MRMN-MB1	35.00	12:20	29-Sep-00	35.00	8:06	30-Sep-00	10:1	49	46	19862.8	31	5	546		
145	Mormon Slough @ Lincoln	04-Oct-00	12:30	COL041000MRMN-MB1	35.50	13:30	04-Oct-00	35.00	9:30	05-Oct-00	10:1	49	36	8664	14	0	161	37*56.869'	121*17.794'
146	Mormon Slough @ Lincoln	11-Oct-00	10:40	COL111000MRMN-DW1	35.00	14:00	11-Oct-00	35.00	9:30	12-Oct-00	20:1	49	48	>48384	49	48	>48384	37*56.872'	121*17.789'

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	Site	Date	Collect time	Sample ID#	Start Temp	Start Time	Start Date	End Temp	End Time	End Date	Ratio	Large Wells Total	Small Wells Total	MPN total	Large Wells E. coli	Small Wells E. coli	MPN E. coli	Northing	Westing
147	Mormon Slough @ Lincoln	19-Oct-00	16:25	COL191000MRMN-MB1	35.50	17:20	19-Oct-00	35.00	15:30	20-Oct-00	10:1	49	48	>24192	40	10	9850	37*56.862'	121*17.788'
148	Mormon Slough @ Lincoln	30-Oct-00	15:43	COL301000MRMN-MB1	35.00	16:45	30-Oct-00	35.00	13:00	31-Oct-00	50:1	49	48	>120,960	49	35	40820	37*56.865'	121*17.785'
149	Mormon Slough @ Lincoln	11-Nov-00	11:20	COL111100MRMN-MB1	34.00	12:00	11-Nov-00	35.00	8:00	12-Nov-00	10:1	49	46	19862.8	35	3	624	37*56.861'	121*17.792'
150	Mormon Slough @ Lincoln	21-Nov-00	10:10	COL211100MRMN-SH1	35.00	13:05	21-Nov-00	35.00	9:05	22-Nov-00	10:1	49	29	5794	13	1	160	37*56.862'	121*17.790'
151	Mormon Slough @ Lincoln	21-Nov-00	10:10	COL211100MRMN-SH2	35.00	13:00	21-Nov-00	35.00	9:00	22-Nov-00	10:1	49	28	5475	11	3	156	37*56.862'	121*17.790'
152	Mormon Slough @ Lincoln	22-Nov-00	10:35	COL221100MRMN-MB1	35.00	12:05	22-Nov-00	35.00	8:05	23-Nov-00	10:1	49	48	>24192	49	48	>24192	37*56.865'	121*17.791'
153	Mormon Slough @ Lincoln	06-Dec-00	14:30	COL061200MRMN-MB1	35.00	15:30	06-Dec-00	35.00	11:30	07-Dec-00	10:1	45	15	1576	12	1	146	37*56.861'	121*17.784'
154	Mormon Slough @ Lincoln	08-Jan-01	14:45	COL080101MRMN-MB1	35.00	16:10	08-Jan-01	35.00	12:00	09-Jan-01	10:1	49	48	>24192	49	35	8164	37*56.863'	121*17.784'
155	Mormon Slough @ Lincoln	11-Jan-01	16:40	COL110101MRMN-MB1	34.50	17:30	11-Jan-01	34.50	13:30	12-Jan-01	10:1	49	48	>24192	49	28	5475		
156	Mormon Slough @ Lincoln	24-Jan-01	12:45	COL240101MRMN-MB1	35.00	14:00	24-Jan-01	35.00	9:30	25-Jan-01	10:1	49	48	>24192	49	31	6488	37*56.865'	121*17.791'
157	Mormon Slough @ Lincoln	02-Feb-01	14:55	COL020201MRMN-LC1	35.00	16:30	02-Feb-01	35.00	13:00	03-Feb-01	20:1	49	48	>48384	49	43	28272		
158	Mormon Slough @ Lincoln	10-Feb-01	12:35	COL100201MRMN-LC1	35.00	14:20	10-Feb-01	35.00	10:20	11-Feb-01	20:1	49	48	>48384	49	13	4718		
159	Mormon Slough @ Lincoln	11-Feb-01	13:00	COL110201MRMN-LC1	35.00	14:00	11-Feb-01	35.00	10:00	12-Feb-01	20:1	49	48	>48384	48	23	6260		
160	Mormon Slough @ Lincoln	05-Mar-01	15:23	COL050301MRMN-LC1	35.00	17:30	05-Mar-01	35.00	15:00	06-Mar-01	20:1	49	48	>48384	49	30	12262		
161	Mormon Slough @ Lincoln	14-Mar-01	13:51	COL140301MRMN-LC1	35.00	15:40	14-Mar-01	35.00	9:50	15-Mar-01	20:1	49	43	28272	49	15	5226		
162	Mormon Slough @ Lincoln	20-Mar-01	11:05	COL200301MRMN-LC1	35.00	12:45	20-Mar-01	35.00	10:30	21-Mar-01	10:1	49	38	9804	47	11	1664		
163	Mormon Slough @ Lincoln	26-Mar-01	15:13	COL260301MRMN-LC1	35.00	17:30	26-Mar-01	35.00	13:30	27-Mar-01	20:1	49	48	>48384	49	32	13734		
164	Mormon Slough @ Lincoln	12-Apr-01	10:45	COL120401MRMN-LC1	35.00	17:00	12-Apr-01	35.00	13:00	13-Apr-01	20:1	49	48	48,384	19	6	623		
165	Mormon Slough @ Lincoln	21-Apr-01	13:55	COL210401MRMN-LC1	35.00	16:30	21-Apr-01	35.00	12:30	22-Apr-01	20:1	49	48	48,384	49	48	48384		
166	Mosher Slough @ Kelley Dr.	08-May-00	14:30	COL080500MSHR-RK	36.00	15:30	08-May-00	35.50	13:30	09-May-00	1:1	49	48	>2419.2	49	41	236.1		
167	Mosher Slough @ Kelley Dr.	24-May-00	14:45	COL240500MSHR-RK	35.50	15:15	24-May-00	35.50	10:30	25-May-00	1:1	49	48	>2419.2	49	24	435.2		
168	Mosher Slough @ Kelley Dr.	07-Aug-00	12:11	COL070800MSHR-LC1	35.00	15:38	07-Aug-00	35.00	12:00	08-Aug-00	1:1	49	48	>2419.2	45	9	131.3	38*01.954'	121*21.811'
169	Mosher Slough @ Kelley Dr.	14-Aug-00	11:13	COL140800MSHR-JF1	35.50	13:40	14-Aug-00	35.00	11:40	15-Aug-00	1:1	49	48	>2419.2	49	26	488.4	38*01.953'	121*21.809'
170	Mosher Slough @ Kelley Dr.	18-Aug-00	13:50	COL180800MSHR-JL	35.50	15:00	18-Aug-00	35.00	11:30	19-Aug-00	1:1	49	48	>2419.2	43	17	143		
171	Mosher Slough @ Kelley Dr.	22-Aug-00	13:39	COL220800MSHR-JL	35.00	16:00	22-Aug-00	34.60	13:00	23-Aug-00	1:1	49	48	>2419.2	43	13	124.6		
172	Mosher Slough @ Kelley Dr.	28-Aug-00	11:57	COL280800MSHR-LC1	34.50	13:15	28-Aug-00	35.00	9:15	29-Aug-00	1:1	49	48	>2419.2	49	16	275.5		
173	Mosher Slough @ Kelley Dr.	20-Sep-00	10:00	COL200900MSHR-MB1	36.00	14:00	20-Sep-00	35.00	11:00	21-Sep-00	1:1	49	48	>2419.2	49	31	648.8		
174	Mosher Slough @ Kelley Dr.	04-Oct-00	11:05	COL041000MSHR-MB1	35.50	13:30	04-Oct-00	35.00	9:30	05-Oct-00	10:1	49	44	15530.7	24	0	317	38*01.952'	121*21.812'
175	Mosher Slough @ Kelley Dr.	19-Oct-00	15:10	COL191000MSHR-MB1	35.50	17:20	19-Oct-00	35.00	15:30	20-Oct-00	10:1	49	42	12996.5	24	4	373	38*01.954'	121*21.806'
176	Mosher Slough @ Kelley Dr.	11-Nov-00	10:25	COL111100MSHR-MB1	34.00	12:00	11-Nov-00	35.00	8:00	12-Nov-00	10:1	49	48	>24192	15	1	187	38*01.952'	121*21.774'
177	Mosher Slough @ Kelley Dr.	21-Nov-00	8:50	COL211100MSHR-SH1	35.00	13:05	21-Nov-00	35.00	9:05	22-Nov-00	10:1	44	16	1497	14	5	221	38*01.950'	121*21.810'
178	Mosher Slough @ Kelley Dr.	21-Nov-00	8:50	COL211100MSHR-SH2	35.00	13:00	21-Nov-00	35.00	9:00	22-Nov-00	10:1	49	15	2613	10	2	132	38*01.950'	121*21.810'
179	Mosher Slough @ Kelley Dr.	22-Nov-00	9:50	COL221100MSHR-MB1	35.00	12:05	22-Nov-00	35.00	8:05	23-Nov-00	10:1	49	48	>24192	49	48	>24192	38*01.954'	121*21.809'
180	Mosher Slough @ Kelley Dr.	28-Nov-00	11:20	COL281100MSHR-SH1	36.00	14:20	28-Nov-00	35.00	10:20	29-Nov-00	10:1	48	10	1789	7	1	85	38*01.958'	121*21.808'
181	Mosher Slough @ Kelley Dr.	05-Dec-00	15:45	COL051200MSHR-MB1	35.00	16:45	05-Dec-00	35.00	12:45	06-Dec-00	10:1	45	16	1624	9	1	109	38*01.951'	121*21.807'
182	Mosher Slough @ Kelley Dr.	08-Jan-01	13:00	COL080101MSHR-MB1	35.00	16:10	08-Jan-01	35.00	12:00	09-Jan-01	10:1	49	48	>24192	49	23	4106	38*01.953'	121*21.808'
183	Mosher Slough @ Kelley Dr.	11-Jan-01	15:55	COL110101MSHR-MB1	34.50	17:30	11-Jan-01	34.50	13:30	12-Jan-01	10:1	49	48	>24192	49	28	3968	38*01.953'	121*21.810'
184	Mosher Slough @ Kelley Dr.	24-Jan-01	11:30	COL240101MSHR-MB1	35.00	14:00	24-Jan-01	35.00	9:30	25-Jan-01	10:1	48	48	10111	47	24	2700	38*01.950'	121*21.804'
185	Mosher Slough @ Kelley Dr.	10-Feb-01	11:00	COL100201MSHR-LC1	35.00	14:20	10-Feb-01	35.00	10:20	11-Feb-01	20:1	49	48	>48384	41	8	1974		
186	Mosher Slough @ Kelley Dr.	11-Feb-01	11:30	COL110201MSHR-LC1	35.00	14:00	11-Feb-01	35.00	10:00	12-Feb-01	20:1	49	48	>48384	42	3	2402		
187	Mosher Slough @ Mariner's Dr.	11-Oct-00	9:10	COL111000MSHR-DW1	35.00	14:00	11-Oct-00	35.00	9:30	12-Oct-00	20:1	49	48	>48384	49	47	>48383.	38*01.951'	121*21.889'
188	Mosher Slough @ Mariner's Dr.	30-Oct-00	13:32	COL301000MSHR-LC1	35.00	16:45	30-Oct-00	35.00	13:00	31-Oct-00	50:1	49	48	>120960	34	9	3540	38*01.951'	121*21.889'
189	Mosher Slough @ Mariner's Dr.	05-Mar-01	13:38	COL050301MSHR-LC1	35.00	17:30	05-Mar-01	35.00	15:00	06-Mar-01	20:1	49	48	>48384	49	31	12976		
190	Mosher Slough @ Mariner's Dr.	14-Mar-01	11:58	COL140301MSHR-LC1	35.00	15:40	14-Mar-01	35.00	9:50	15-Mar-01	20:1	44	9	2446	1	0	20		
191	Mosher Slough @ Mariner's Dr.	20-Mar-01	9:40	COL200301MSHR-LC1	35.00	12:45	20-Mar-01	35.00	10:30	21-Mar-01	10:1	49	31	6488	16	6	262		
192	Mosher Slough @ Mariner's Dr.	26-Mar-01	13:10	COL260301MSHR-LC1	35.00	17:30	26-Mar-01	35.00	13:30	27-Mar-01	20:1	49	48	>48384	49	48	>48384	38*01.953'	121*21.886'
193	Mosher Slough @ Mariner's Dr.	12-Apr-01	10:28	COL120401MSHR-LC1	35.00	17:00	12-Apr-01	35.00	13:00	13-Apr-01	20:1	49	48	>48384	30	8	1142		
194	Mosher Slough @ Mariner's Dr.	21-Apr-01	12:02	COL210401MSHR-LC1	35.00	16:30	21-Apr-01	35.00	12:30	22-Apr-01	20:1	49	48	>48384	49	27	10344		
195	Mosher Slugh @ Sandman Park	09-May-00	15:30	COL090500MSHR-RK	35.50	16:00	09-May-00	35.00	13:30	10-May-00	1:1	49	48	>2419.2	49	24	435.2		
196	Mosher Slugh @ Sandman Park	12-Jun-00	15:30	COL120600MSHR-RK	35.00	14:00	12-Jun-00	35.00	12:45	13-Jun-00	1:1	49	48	>2419.2	48	17	238.2		
197	Smith Canal @ I-5	27-Apr-00	10:55	COL270400SMTH-RK2	35.00	11:50	27-Apr-00	35.50	8:20	28-Apr-00	1:1	49	43	1413.6	29	5	49.6		
198	Smith Canal @ I-5	10-May-00	16:30	COL100500SMTH-RK1	35.00	18:20	10-May-00	35.00	14:30	11-May-00	1:1	49	48	>2419.2	49	33	727		
199	Smith Canal @ I-5	06-Jun-00	10:35	COL060600SMTH-RK1	36.00	11:30	06-Jun-00	35.50	9:30	07-Jun-00	1:1	49	48	>2419.2	33	4	58.3		
200	Smith Canal @ I-5	08-Jun-00	10:10	COL080600SMTH-RK1	35.00	11:45	08-Jun-00	35.50	9:00	09-Jun-00	1:1	49	48	>2419.2	32	5	57.3		
201	Smith Canal @ I-5	09-Jun-00	10:15	COL090600SMTH-RK1	35.00	11:45	09-Jun-00	35.50	9:30	10-Jun-00	1:1	49	48	>2419.2	30	1	43.9		

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	Site	Date	Collect time	Sample ID#	Start Temp	Start Time	Start Date	End Temp	End Time	End Date	Ratio	Large Wells Total	Small Wells Total	MPN total	Large Wells E. coli	Small Wells E. coli	MPN E. coli	Northing	Westing
202	Smith Canal @ I-5	21-Jun-00	12:30	COL210600SMTH-JF1	35.50	14:00	21-Jun-00	35.00	10:00	22-Jun-00	1:1	48	47	960.6	29	2	44.8		
203	Smith Canal @ I-5	06-Jul-00	10:35	COL060700SMTH-JF	35.00	12:00	06-Jul-00	35.00	9:45	07-Jul-00	1:1	49	48	>2419.2	48	21	285.1		
204	Smith Canal @ I-5	28-Jul-00	11:30	COL280700SMTH-JL1	35.00	12:30	28-Jul-00	35.00	9:30	29-Jul-00	1:1	49	48	>2419.2	39	7	86		
205	Smith Canal @ I-5	07-Aug-00	13:49	COL070900SMTH-JL1	35.00	15:38	07-Aug-00	35.50	12:00	08-Aug-00	1:1	49	48	>2419.2	29	1	43.2	37*57.635'	121*20.105'
206	Smith Canal @ I-5	05-Sep-00	11:20	COL050900SMTH-MB1	35.00	12:00	05-Sep-00	35.00	9:10	06-Sep-00	1:1	49	48	>2419.2	43	10	117.8		
207	Smith Canal @ Pershing Ave.	10-May-00	17:00	COL100500SMTH-RK2	35.00	18:20	10-May-00	35.50	14:30	11-May-00	1:1	49	48	>2419.2	49	45	1732.87		
208	Smith Canal @ Pershing Ave.	11-Oct-00	10:20	COL111000SMTH-DW1	35.00	14:00	11-Oct-00	35.00	9:30	12-Oct-00	20:1	49	48	>48,384	48	45	34657.4	37*57.981'	121*18 826'
209	Smith Canal @ Pershing Ave.	30-Oct-00	15:26	COL301000SMTH-MB1	35.00	16:45	30-Oct-00	35.00	12:45	31-Oct-00	50:1	49	48	>120960	45	11	6980	37*57.980'	121*18 827
210	Smith Canal @ Pershing Ave.	02-Feb-01	13:55	COL020201SMTH-LC1	35.00	16:30	02-Feb-01	35.00	13:00	03-Feb-01	20:1	49	48	>48384.0	48	10	3578		
211	Smith Canal @ Yosemite Lake	27-Apr-00	10:45	COL270400SMTH-RK1	35.00	11:50	27-Apr-00	35.50	8:20	28-Apr-00	1:1	49	44	1553.07	29	5	49.6		
212	Smith Canal @ Yosemite Lake	08-Jul-00	12:11	COL140800SMTH-LC1	35.50	13:40	08-Jul-00	35.50	11:00	08-Aug-00	1:1	49	48	>2419.2	49	23	410.6	37*58.078	121*18.078
213	Smith Canal @ Yosemite Lake	07-Aug-00	13:22	COL070800SMTH-JL1	35.00	15:38	07-Aug-00	35.50	12:00	08-Aug-00	1:1	49	48	>2419.2	49	15	261.3	37*58.067	121*18.406'
214	Smith Canal @ Yosemite Lake	18-Aug-00	14:15	COL180800SMTH-JF	35.50	15:00	18-Aug-00	35.50	11:30	19-Aug-00	1:1	49	48	>2419.2	47	21	240		
215	Smith Canal @ Yosemite Lake	22-Aug-00	14:24	COL220800SMTH-JL	35.00	16:00	22-Aug-00	34.60	13:00	23-Aug-00	1:1	49	48	>2419.2	42	5	98.8		
216	Smith Canal @ Yosemite Lake	28-Aug-00	11:55	COL280800SMTH-LC1	34.50	13:15	28-Aug-00	35.00	9:15	29-Aug-00	1:1	49	48	>2419.2	49	24	435.2		
217	Smith Canal @ Yosemite Lake	20-Sep-00	11:10	COL200900SMTH-MB1	36.00	14:00	20-Sep-00	35.00	11:00	21-Sep-00	1:1	49	48	>2419.2	47	12	172.3		
218	Smith Canal @ Yosemite Lake	29-Sep-00	11:45	COL290900SMTH-MB1	35.00	12:20	29-Sep-00	35.00	8:06	30-Sep-00	10:1	49	33	7270	14	2	185		
219	Smith Canal @ Yosemite Lake	04-Oct-00	12:10	COL041000SMTH-MB1	35.50	13:30	04-Oct-00	35.00	9:30	05-Oct-00	10:1	49	25	4611	29	1	432	37*58.077'	121*18.422'
220	Smith Canal @ Yosemite Lake	10-Oct-00	15:45	COL101000SMTH-MB1	35.50	17:10	10-Oct-00	35.00	13:10	11-Oct-00	10:1	49	48	>24192	49	41	12033.1		
221	Smith Canal @ Yosemite Lake	19-Oct-00	16:10	COL191000SMTH-MB1	35.50	17:20	19-Oct-00	35.00	15:30	20-Oct-00	10:1	49	47	24191.7	46	13	1616	37*58.077'	121*18.414'
222	Smith Canal @ Yosemite Lake	11-Nov-00	11:10	COL111100SMTH-MB1	34.00	12:00	11-Nov-00	35.00	8:00	12-Nov-00	10:1	49	48	>24,192.	49	25	4611	37*58.077'	121*18.416'
223	Smith Canal @ Yosemite Lake	21-Nov-00	9:55	COL211100SMTH-SH2	35.00	13:00	21-Nov-00	35.00	9:00	22-Nov-00	10:1	49	45	17329	29	12	612	37*58.079'	121*18.418'
224	Smith Canal @ Yosemite Lake	21-Nov-00	9:55	COL211100SMTH-SH1	35.00	13:05	21-Nov-00	35.00	9:05	22-Nov-00	10:1	49	32	6867	31	2	495	37*58.079'	121*18.418'
225	Smith Canal @ Yosemite Lake	22-Nov-00	10:25	COL221100SMTH-MB1	35.00	12:05	22-Nov-00	35.00	8:05	23-Nov-00	10:1	49	48	>24192	48	14	2098	37*58.077'	121*18.416'
226	Smith Canal @ Yosemite Lake	28-Nov-00	11:50	COL281100SMTH-SH1	36.00	14:20	28-Nov-00	35.00	10:20	29-Nov-00	10:1	49	31	6488	4	0	41	37*58.078'	121*18.418'
227	Smith Canal @ Yosemite Lake	06-Dec-00	14:05	COL061200SMTH-MB1	35.00	15:30	06-Dec-00	35.00	11:30	07-Dec-00	10:1	49	48	>24192	16	5	250	37*58.078'	121*18.416'
228	Smith Canal @ Yosemite Lake	08-Jan-01	14:30	COL080101SMTH-MB1	35.00	16:10	08-Jan-01	35.00	12:00	09-Jan-01	10:1	49	48	>24192	49	43	14136	37*58.075'	121*18.416'
229	Smith Canal @ Yosemite Lake	10-Jan-01	16:45	COL100101SMTH-MB1	35.40	17:30	10-Jan-01	35.00	13:30	11-Jan-01	10:1	49	48	>24192	49	29	5794		
230	Smith Canal @ Yosemite Lake	24-Jan-01	12:30	COL240101SMTH-MB1	35.00	14:00	24-Jan-01	35.00	9:30	25-Jan-01	10:1	49	48	>24192	46	14	1669	37*58.078'	121*18.419'
231	Smith Canal @ Yosemite Lake	27-Jan-01	10:50	COL270101SMTH-MB1	34.00	12:00	27-Jan-01	35.00	8:00	28-Jan-01	10:1	49	48	>24192	49	15	2613	37*58.078'	121*18.420'
232	Smith Canal @ Yosemite Lake	10-Feb-01	12:22	COL100201SMTH-LC1	35.00	14:20	10-Feb-01	35.00	10:20	11-Feb-01	20:1	49	48	>48384	40	12	2078		
233	Smith Canal @ Yosemite Lake	11-Feb-01	12:20	COL110201SMTH-LC1	35.00	14:00	11-Feb-01	35.00	10:00	12-Feb-01	20:1	49	48	>48384	44	9	2446		
234	Smith Canal @ Yosemite Lake	05-Mar-01	14:50	COL050301SMTH-LC1	35.00	17:30	05-Mar-01	35.00	15:00	06-Mar-01	20:1	49	48	>48384	49	46	39725.6		
235	Smith Canal @ Yosemite Lake	14-Mar-01	13:29	COL140301SMTH-LC1	35.00	15:40	14-Mar-01	35.00	9:50	15-Mar-01	20:1	45	14	3058	6	1	148		
236	Smith Canal @ Yosemite Lake	20-Mar-01	10:47	COL200301SMTH-LC1	35.00	12:45	20-Mar-01	35.00	10:30	21-Mar-01	10:1	49	23	4106	8	0	86		
237	Smith Canal @ Yosemite Lake	26-Mar-01	14:36	COL260301SMTH-LC1	35.00	17:30	26-Mar-01	35.00	13:30	27-Mar-01	20:1	49	48	>48384	49	28	10950	37*58.076'	121*18.412'
238	Smith Canal @ Yosemite Lake	12-Apr-01	9:50	COL120401SMTH-LC1	35.00	17:00	12-Apr-01	35.00	13:00	13-Apr-01	20:1	49	48	>48,384	28	1	820		
239	Smith Canal @ Yosemite Lake	21-Apr-01	13:31	COL210401SMTH-LC1	35.00	16:30	21-Apr-01	35.00	12:30	22-Apr-01	20:1	49	48	>48,384	49	46	39725.6		
240	Walker Slough @ Manthey Rd.	11-Oct-00	11:00	COL111000WLKR-DW1	35.00	14:00	11-Oct-00	35.00	9:30	12-Oct-00	20:1	49	48	>48384	49	23	8212	37*55.019'	121*17.490'
241	Walker Slough @ Manthey Rd.	30-Oct-00	16:05	COL301000WLKR-MB1	35.00	16:45	30-Oct-00	35.00	13:00	31-Oct-00	50:1	49	48	>120960	43	11	6055	37*55.018'	121*17.491
242	Walker Slough @ Manthey Rd.	06-Dec-00	14:45	COL061200WLKR-MB1	35.00	15:30	06-Dec-00	35.00	11:30	07-Dec-00	10:1	25	3	379	3	0	31	37*55.015'	121*17.480'
243	Walker Slough @ Manthey Rd.	08-Jan-01	15:00	COL080101WLKR-MB1	35.00	16:10	08-Jan-01	35.00	12:00	09-Jan-01	10:1	49	48	>24192	49	13	2359	37*55.012'	121*17.490'
244	Walker Slough @ Manthey Rd.	11-Jan-01	16:55	COL110101WLKR-MB1	34.50	17:30	11-Jan-01	34.50	13:30	12-Jan-01	10:1	49	48	>24192	49	23	4106		
245	Walker Slough @ Manthey Rd.	24-Jan-01	13:00	COL240101WLKR-MB1	35.00	14:00	24-Jan-01	35.00	9:30	25-Jan-01	10:1	49	48	>2419.2	41	5	906.0	37*55.004'	121*17.497'
246	Walker Slough @ Manthey Rd.	10-Feb-01	12:35	COL100201WLKR-LC1	35.00	14:20	10-Feb-01	35.00	10:20	11-Feb-01	20:1	49	48	>48384	17	3	480		
247	Walker Slough @ Manthey Rd.	11-Feb-01	13:15	COL110201WLKR-LC1	35.00	14:00	11-Feb-01	35.00	10:00	12-Feb-01	20:1	49	48	>48384	47	14	3700		
248	Walker Slough @ Manthey Rd.	05-Mar-01	16:28	COL050301WLKR-LC1	35.00	17:30	05-Mar-01	35.00	15:00	06-Mar-01	20:1	49	48	>48384	49	44	31061.4		
249	Walker Slough @ Manthey Rd.	14-Mar-01	14:13	COL140301WLKR-LC1	35.00	15:40	14-Mar-01	35.00	9:50	15-Mar-01	20:1	45	8	2548	11	0	244		
250	Walker Slough @ Manthey Rd.	20-Mar-01	11:23	COL200301WLKR-LC1	35.00	12:45	20-Mar-01	35.00	10:30	21-Mar-01	10:1	49	17	2909	8	0	86		
251	Walker Slough @ Manthey Rd.	26-Mar-01	15:35	COL260301WLKR-LC1	35.00	17:30	26-Mar-01	35.00	13:30	27-Mar-01	20:1	49	48	>48384	49	17	5818		
252	Walker Slough @ Manthey Rd.	12-Apr-01	11:00	COL120401WLKR-LC1	35.00	17:00	12-Apr-01	35.00	13:00	13-Apr-01	20:1	49	33	14,540	6	2	168		
253	Walker Slough @ Manthey Rd.	21-Apr-01	14:14	COL210401WLKR-LC1	35.00	16:30	21-Apr-01	35.00	12:30	22-Apr-01	20:1	49	48	>48384	23	3	682		
254	Walker Slough @ Turnpike Rd.	04-May-00	17:30	COL040500WLKR-RK	35.00	17:30	04-May-00	35.50	11:30	05-May-00	1:1	49	48	>2419.2	49	14	248		
255	Walker Slough @ Turnpike Rd.	07-Aug-00	14:20	COL070800WLKR-JL1	35.00	15:38	07-Aug-00	35.50	12:00	08-Aug-00	1:1	49	48	>2419.2	49	22	387.3	37*55.015'	121*17.416'
256	Walker Slough @ Turnpike Rd.	14-Aug-00	12:47	COL140800WLKR-JF1	35.50	13:40	14-Aug-00	35.50	10:00	15-Aug-00	1:1	49	48	>2419.2	47	23	259.5	37*55.030'	121*17.423'

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	Site	Date	Collect time	Sample ID#	Start Temp	Start Time	Start Date	End Temp	End Time	End Date	Ratio	Large Wells Total	Small Wells Total	MPN total	Large Wells E. coli	Small Wells E. coli	MPN E. coli	Northing	Westing
257	Walker Slough @ Turnpike Rd.	18-Aug-00	14:45	COL188900WLKR-JF	35.50	15:00	18-Aug-00	35.50	11:30	19-Aug-00	1:1	49	48	>2419.2	49	37	920.8		
258	Walker Slough @ Turnpike Rd.	22-Aug-00	15:05	COL228000WLKR-JL	35.00	16:00	22-Aug-00	34.60	13:00	23-Aug-00	1:1	49	48	>2419.2	44	12	133.2		
259	Walker Slough @ Turnpike Rd.	28-Aug-00	12:30	COL280800WLKR-MB1	34.00	13:15	28-Aug-00	35.00	9:15	29-Aug-00	1:1	49	48	>2419.2	49	19	325.5		
260	Walker Slough @ Turnpike Rd.	20-Sep-00	12:00	COL200900WLKR-MB1	36.00	14:00	20-Sep-00	35.00	11:00	21-Sep-00	1:1	49	48	>2419.2	49	21	365.4		
261	Walker Slough @ Turnpike Rd.	04-Oct-00	12:45	COL041000WLKR-MB1	35.50	13:30	04-Oct-00	35.00	9:30	05-Oct-00	10:1	49	48	>24192	23	3	341	37*55.017'	121*17.422'
262	Walker Slough @ Turnpike Rd.	10-Oct-00	16:09	COL101000WLKR-MB1	35.50	17:10	10-Oct-00	35.00	13:10	11-Oct-00	10:1	49	48	>24192	49	46	19862.8		
263	Walker Slough @ Turnpike Rd.	19-Oct-00	16:40	COL191000WLKR-MB1	35.50	17:20	19-Oct-00	35.00	15:30	20-Oct-00	10:1	49	47	24191.7	42	10	1106	37*55.017'	121*17.419'
264	Walker Slough @ Turnpike Rd.	11-Nov-00	11:30	COL111100WLKR-MB1	34.00	12:00	11-Nov-00	35.00	8:00	12-Nov-00	10:1	49	35	8164	19	0	233	37*55.013'	121*17.425'
265	Walker Slough @ Turnpike Rd.	21-Nov-00	10:25	COL211100WLKR-SH2	35.00	13:00	21-Nov-00	35.00	9:00	22-Nov-00	10:1	49	16	2755	4	0	41	37*55.015'	121*17.423'
266	Walker Slough @ Turnpike Rd.	21-Nov-00	10:25	COL211100WLKR-SH1	35.00	13:05	21-Nov-00	35.00	9:05	22-Nov-00	10:1	49	13	2359	10	0	110	37*55.015'	121*17.423'
267	Walker Slough @ Turnpike Rd.	28-Nov-00	13:15	COL281100WLKR-SH1	36.00	14:20	28-Nov-00	35.00	10:20	29-Nov-00	10:1	49	22	3873	5	0	52	37*55.017'	121'17.420'
268																			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	Site	Date	Collect time	Sample ID#	Start Temp	Start Time	Start Date	End Temp	End Time	End Date	Ratio	Large Wells Total	Small Wells Total	MPN total	Large Wells E. coli	Small Wells E. coli	MPN E. coli	Northing	Westing
269	Listing of sites outside Stockton, CA																		
270	Avena Drain @ Avena Rd.	10-Jan-01	12:00	COL100101AVND-SH1	35.00	13:00	10-Jan-01	35.00	8:45	11-Jan-01	20:1	49	48	>48384	49	48	>48384		
271	Avena Drain @ Avena Rd.	12-Jan-01	10:30	COL120101AVND-MB1	35.00	11:30	12-Jan-01	35.00	7:15	13-Jan-01	20:1	49	48	>48384	49	40	22397		
272	Avena Drain @ Brennan Rd.	03-Nov-00	12:00	COL031100AVND-MB1	33.50	13:00	03-Nov-00	35.00	9:00	04-Nov-00	100:1	49	48	>241920	3	1	410		
273	Avena Drain @ Carrolton Rd.	25-Oct-00	10:55	DRY251000AVND-MB3	35.50	12:05	25-Oct-00	35.00	9:05	26-Oct-00	1:1	49	48	>2419.2	49	48	>2419.2		
274	Avena Drain @ Carrolton Rd.	08-Nov-00	11:00	DRY081100AVND-MB2	35.00	12:30	08-Nov-00	35.00	8:30	09-Nov-00	100:1	49	48	>241920	46	12	15650	37°50.781'	121°04.316'
275	Avena Drain @ Carrolton Rd.	12-Jan-01	10:15	DRY120101AVND-MB1	35.00	11:30	12-Jan-01	35.00	7:15	13-Jan-01	20:1	49	48	>48384	49	30	12262		
276	Avena Drain @ Jack Tone Rd.	25-Oct-00	10:30	DRY251000AVND-MB1	35.50	12:05	25-Oct-00	35.00	9:05	26-Oct-00	1:1	49	48	>2419.2	49	45	1732.87		
277	Avena Drain @ Jack Tone Rd.	03-Nov-00	10:50	DRY031100AVND-MB1	33.50	13:00	03-Nov-00	35.00	9:00	04-Nov-00	100:1	49	22	38730	7	0	740		
278	Avena Drain @ Murphy Rd.	25-Oct-00	10:45	DRY251000AVND-MB2	35.50	12:05	25-Oct-00	35.00	9:05	26-Oct-00	1:1	49	48	>2419.2	49	48	>2419.2		
279	Avena Drain @ Murphy Rd.	03-Nov-00	11:05	DRY031100AVND-MB2	33.50	13:00	03-Nov-00	35.00	9:00	04-Nov-00	100:1	49	48	>241920	23	4	3540		
280	Avena Drain @ Murphy Rd.	08-Nov-00	10:45	DRY081100AVND-MB1	35.00	12:30	08-Nov-00	35.00	8:30	09-Nov-00	100:1	49	43	141360	1	0	100	37°51.049'	121°06.513'
281	Avena Drain @ Van Allen Rd.	03-Nov-00	11:45	COL031100AVND-MB2	33.50	13:00	03-Nov-00	35.00	9:00	04-Nov-00	100:1	49	48	>241920	22	7	3770		
282	Avena Drain @ Van Allen Rd.	08-Nov-00	11:30	COL081100AVND-MB1	35.00	12:30	08-Nov-00	35.00	8:30	09-Nov-00	100:1	49	47	241917	12	0	1350	37°50.272'	121°03.209'
283	Avena Drain @ Van Allen Rd.	12-Jan-01	10:35	COL120101AVND-MB2	35.00	11:30	12-Jan-01	35.00	7:15	13-Jan-01	20:1	49	48	>48384	49	37	18416		
284	Bear Creek @ I-5	08-Jan-01	12:50	COL080101BRCR-MB1	35.00	16:10	08-Jan-01	35.00	12:00	09-Jan-01	10:1	20	6	328	3	0	31	38°02.610'	121°22.249'
285	Bear Creek @ Thornton Rd.	05-Dec-00	15:20	COL051200BRCR-MB1	35.00	16:45	05-Dec-00	35.00	12:45	06-Dec-00	10:1	49	27	5172	27	0	374		
286	Bear Creek @ Thornton Rd.	12-Apr-01	10:00	COL120401BRCR-LC1	35.00	17:00	12-Apr-01	35.00	13:00	13-Apr-01	20:1	49	23	8,212	0	0	<20		
287	Beaver Slough @ Blossom Road	14-Nov-00	12:40	COL141100BVRS-MB1	35.00	13:35	14-Nov-00	35.00	9:30	15-Nov-00	10:1	22	3	323	0	0	0	38°12.307'	121°26.845'
288	Bethany Reservoir State Rec. Area	07-Nov-00	11:40	COL071100BTHN-MB1	35.00	15:00	07-Nov-00	35.00	13:00	08-Nov-00	10:1	45	10	1354	17	0	203	37°46.866'	121°36.953'
289	Bethel Island @ Bethel Harbor	09-Nov-00	11:30	COL091100BTHL-SH1	35.00	14:30	09-Nov-00	35.00	9:30	10-Nov-00	10:1	13	2	171	2	0	20	38°02.035'	121°37.236'
290	Bethel Island @ Frank's Cove	09-Nov-00	12:15	COL091100BTHL-SH4	35.00	14:30	09-Nov-00	35.00	9:30	10-Nov-00	10:1	19	5	298	4	0	41	38°01.295'	121°36.569'
291	Bethel Island @ Russo's Marina	09-Nov-00	11:50	COL091100BTHL-SH3	35.00	14:30	09-Nov-00	35.00	9:30	10-Nov-00	10:1	13	2	171	2	0	20	38°02.035'	121°37.236'
292	Bethel Island @ Russo's Marina	09-Nov-00	11:50	COL091100BTHL-SH2	35.00	14:30	09-Nov-00	35.00	9:30	10-Nov-00	10:1	16	1	201	1	0	10	38°02.035'	121°37.236'
293	Buckley Cove	25-Apr-00	10:15	COL250400BCKL-JF	34.00	12:20	25-Apr-00	35.00	8:10	26-Apr-00	1:1	49	40	1119.85	34	2	57.6		
294	Buckley Cove	02-May-00	12:03	COL020500BCKL-RK1	35.50	13:30	02-May-00	35.50	9:30	03-May-00	1:1	49	45	1732.87	24	3	35.9		
295	Buckley Cove	13-Jun-00	11:40	COL130600BCKL-JF1	35.00	13:00	13-Jun-00	35.00	11:00	14-Jun-00	1:1	49	48	>2419.2	38	8	88.4		
296	Buckley Cove	09-Aug-00	14:15	COL090800BCKL-JL2	35.00	16:30	09-Aug-00	35.50	13:40	10-Aug-00	1:1	49	48	>2419.2	29	4	48	37°58.633'	121°22.476'
297	Buckley Cove	09-Aug-00	12:30	COL090800BCKL-JL1	35.00	16:30	09-Aug-00	35.50	13:40	10-Aug-00	1:1	49	47	2419.17	27	8	49.6	37°58.639'	121°22.476'
298	Buckley Cove	18-Sep-00	10:20	COL180900BCKL-MB1	35.00	12:00	18-Sep-00	35.00	9:00	19-Sep-00	1:1	49	47	2419.17	24	0	31.7		
299	Buckley Cove	10-Nov-00	11:15	COL101100BCKL-MB1	35.00	13:00	10-Nov-00	34.50	9:15	11-Nov-00	10:1	44	5	1086	2	2	41	37°58.637'	121°22.505'
300	Devil's Isle	12-Oct-00	11:45	COL121000DVLS-MB1	35.00	15:10	12-Oct-00	35.00	11:10	13-Oct-00	20:1	28	5	944	1	0	20	38°05.507'	121°29.514'
301	Disappointment Slough	29-Aug-00	11:50	COL290800DSPP-MB1	35.00	14:00	29-Aug-00	35.50	10:00	30-Aug-00	1:1	49	48	>2419.2	24	0	31.7	38°02.670'	121°26.834'
302	Disappointment Slough	29-Aug-00	12:00	COL290800DSPP-MB2	35.00	14:00	29-Aug-00	35.50	10:00	30-Aug-00	1:1	49	47	2419.17	21	13	44.1	38°02.496'	121°26.697'
303	Disappointment Slough	29-Aug-00	12:15	COL290800DSPP-MB3	35.00	14:00	29-Aug-00	35.50	10:00	30-Aug-00	1:1	49	47	2419.17	6	2	8.2	38°02.527'	121°26.357'
304	Dredger cut	15-Aug-00	11:40	COL150800DRDG-JL1	35.00	14:20	15-Aug-00	34.50	10:30	16-Aug-00	1:1	49	48	>2419.2	30	9	58.8	38°05.220'	121°24.327'
305	Duck Creek @ Pock Lane	07-Aug-00	14:38	COL070800DCKC-JL	35.00	15:38	07-Aug-00	35.00	12:00	08-Aug-00	1:1	49	48	>2419.2	40	12	103.9	37°55.621'	121°14.636'
306	Duck Creek @ Pock Lane	12-Apr-01	11:30	COL120401DCKC-LC1	35.00	17:00	12-Apr-01	35.00	13:00	13-Apr-01	20:1	45	9	2,626	0	0	<20		
307	Dutch Slough @ Bethel Island	09-Nov-00	12:25	COL091100DTCH-SH1	35.00	14:30	09-Nov-00	35.00	9:30	10-Nov-00	10:1	28	5	472	0	0	<10	38°00.781'	121°38.468'
308	Fourteen Mile Slough	04-Jul-00	13:20	COL040700FRTN-BJ	35.50	16:45	04-Jul-00	35.50	14:30	05-Jul-00	1:1	49	48	>2419.2	45	16	162.4		
309	Fourteen Mile Slough	16-Jul-00	10:35	COL160700FRTN-BJ	35.00	14:30	16-Jul-00	35.50	12:00	17-Jul-00	1:1	49	48	>2419.2	37	4	71.2		
310	Fourteen Mile Slough	09-Aug-00	13:09	COL090800FRTN-JL1	35.00	16:30	09-Aug-00	35.50	13:40	10-Aug-00	1:1	49	48	>2419.2	25	2	35	38°00.803'	121°23.038'
311	Fourteen Mile Slough	09-Aug-00	14:51	COL090800FRTN-JL2	35.00	16:30	09-Aug-00	35.50	13:40	10-Aug-00	1:1	49	48	>2419.2	17	4	25.3	38°00.807	121°23.041
312	Fourteen Mile Slough	12-Sep-00	10:54	COL120900FRTN-MB1	36.00	11:35	12-Sep-00	35.00	9:30	13-Sep-00	1:1	49	48	>2419.2	31	4	52.9		
313	Fourteen Mile Slough	21-Sep-00	11:01	COL210900FRTN-MB1	35.50	12:45	21-Sep-00	35.00	9:00	22-Sep-00	1:1	49	48	>2419.2	18	2	24.3	37°59.802'	121°24.643'
314	Fourteen Mile Slough	02-Nov-00	11:15	COL021100FRTN-MB1	35.00	12:25	02-Nov-00	34.50	9:00	03-Nov-00	10:1	49	14	2481	5	0	52	37°59.809'	121°24.631'
315	Fourteen-Mile Slough @ Feather River Dr.	06-Dec-00	13:15	COL061200FRTN-MB1	35.00	15:30	06-Dec-00	35.00	11:30	07-Dec-00	10:1	22	2	309	6	1	74	37°59.731'	121°21.007'
316	Fourteen-Mile Slough @ Feather River Dr.	08-Jan-01	13:55	COL080101FRTN-MB1	35.00	16:10	08-Jan-01	35.00	12:00	09-Jan-01	10:1	49	24	4350	16	2	213	37°59.729'	121°21.010'
317	Fourteen-Mile Slough @ Feather River Dr.	12-Apr-01	10:15	COL120401FRTN-LC1	35.00	17:00	12-Apr-01	35.00	13:00	13-Apr-01	20:1	49	27	10344	1	0	20		
318	French Camp Slough	11-Sep-00	10:15	COL110900FRNC-MB1	35.00	14:00	11-Sep-00	35.00	10:00	12-Sep-00	1:1	49	48	>2419.2	49	18	307.6	37°55.071'	121°18.917'
319	French Camp Slough	26-Sep-00	10:10	COL260900FRNC-MB1	35.00	12:30	26-Sep-00	35.00	9:00	27-Sep-00	10:1	49	44	15530.7	20	2	226	37°55.112'	121°19.009
320	French Camp Slough	09-Oct-00	10:50	COL091000FRNC-MB1	35.00	12:40	09-Oct-00	34.50	10:00	10-Oct-00	10:1	49	41	12033.1	29	5	496	37°55.116'	121°19.010'
321	French Camp Slough	31-Oct-00	11:05	COL311000FRNC-SH1	35.00	13:00	31-Oct-00	35.00	10:40	01-Nov-00	20:1	46	10	7335	0	0	0	37°55.217'	121°19.133'
322	Grant Line Canal	07-Nov-00	13:00	COL071100GRNT-MB1	35.00	15:00	07-Nov-00	35.00	13:00	08-Nov-00	10:1	40	3	809	2	1	30	37°49.152'	121°27.029'
323	Haven Acres	19-Sep-00	12:15	COL190900HVNC-MB1	35.00	14:00	19-Sep-00	35.00	10:00	20-Sep-00	1:1	49	48	>2419.2	6	0	6.3	37°51.030'	121°19.316'

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	Site	Date	Collect time	Sample ID#	Start Temp	Start Time	Start Date	End Temp	End Time	End Date	Ratio	Large Wells Total	Small Wells Total	MPN total	Large Wells E. coli	Small Wells E. coli	MPN E. coli	Northing	Westing
324	Herman & Helens	04-Jul-00	14:48	COL040700HRMN-BJ	35.00	16:45	04-Jul-00	35.00	14:30	05-Jul-00	1:1	49	48	>2419.2	16	2	21.3		
325	Herman & Helens	12-Oct-00	13:29	COL131000HRMN-MB2	35.00	15:10	12-Oct-00	35.00	11:10	13-Oct-00	20:1	22	4	672	0	0	0	38°03.540'	121°30.061'
326	Herman & Helens	12-Oct-00	13:29	COL121000HRMN-MB1	35.00	15:10	12-Oct-00	35.00	11:10	13-Oct-00	20:1	18	7	614	0	0	0	38°03.540'	121°30.061'
327	Herman & Helens	14-Oct-00	16:20	COL141000HRMN-MB1	35.00	17:20	14-Oct-00	35.00	14:45	15-Oct-00	20:1	49	39	20924.8	30	2	942		
328	Herman & Helens	13-Nov-00	11:30	COL131000HRMN-MB1	35.00	13:55	13-Nov-00	35.00	10:00	14-Nov-00	20:1	25	2	728	2	0	40	38°03.634'	121°29.993'
329	King Island Resort	10-Mar-00	11:00	COL031000KNGS-SH1	35.00	13:52	10-Mar-00	34.50	10:00	10-Apr-00	10:1	35	7	703	0	0	<1	38°03.306'	121°27.548'
330	King Island Resort	13-Jun-00	10:57	COL130600KNGS-JF1	35.00	13:00	13-Jun-00	35.00	10:00	14-Jun-00	1:1	49	40	1119.85	4	0	4.1		
331	King Island Resort	04-Jul-00	14:45	COL040700KNGS-BJ	35.00	14:25	04-Jul-00	35.50	16:45	05-Jul-00	1:1	49	38	980.4	10	3	14.3		
332	King Island Resort	29-Aug-00	11:25	COL290800KNGS-MB1	35.00	14:00	29-Aug-00	35.00	9:15	30-Aug-00	1:1	49	43	1413.6	16	2	21.3		
333	King Island Resort	17-Oct-00	15:15	COL171000KNGS-MB1	33.50	17:25	17-Oct-00	36.00	14:45	18-Oct-00	10:1	20	7	341	2	1	30	38°03.295'	121°27.567'
334	Lazy M Marina	07-Nov-00	11:15	COL071100LZYM-MB1	35.00	15:00	07-Nov-00	35.00	13:00	08-Nov-00	10:1	44	17	1541	1	4	50	37°56.223'	121°36.214'
335	Lincoln Village West	25-Apr-00	11:00	COL250400LNVW-JF	34.00	12:20	25-Apr-00	35.00	8:10	26-Apr-00	1:1	49	29	579.4	23	4	58.5		
336	Lincoln Village West	02-May-00	12:35	COL020500LNVW-RK1	35.50	13:30	02-May-00	35.00	9:30	03-May-00	1:1	49	42	1299.65	38	20	113.9		
337	Lincoln Village West	24-May-00	10:45	COL240500LNVW-RK	35.10	11:30	24-May-00	35.00	8:45	25-May-00	1:1	49	42	1299.65	19	5	29.8		
338	Lincoln Village West	01-Jun-00	10:30	COL010600LNVW-RK	35.00	11:30	01-Jun-00	35.00	7:10	02-Jun-00	1:1	49	45	1732.87	44	13	137.4		
339	Lincoln Village West	13-Jun-00	10:14	COL130600LNVW-JF1	35.00	13:00	13-Jun-00	35.00	10:00	14-Jun-00	1:1	49	47	2419.17	49	21	365.4		
340	Lincoln Village West	21-Jun-00	11:31	COL210600LNVW-JF	35.50	14:00	21-Jun-00	35.00	10:00	22-Jun-00	1:1	49	41	1203.31	38	8	83.9		
341	Lincoln Village West	30-Jun-00	10:50	COL300600LNVW-JF	35.50	12:00	30-Jun-00	35.00	9:45	01-Jul-00	1:1	49	45	1732.87	20	3	28.8		
342	Lincoln Village West	04-Jul-00	13:45	COL040700LNVW-BJ	35.00	16:45	04-Jul-00	35.00	14:30	05-Jul-00	1:1	49	48	>2419.2	49	10	125.9		
343	Lincoln Village West	16-Jul-00	10:50	COL160700LNVW-BJ	35.00	14:30	16-Jul-00	35.00	12:00	17-Jul-00	1:1	49	44	1553.07	35	11	78.4		
344	Lincoln Village West	29-Aug-00	10:24	COL290800LNVW-MB1	35.00	12:30	29-Aug-00	35.00	9:00	30-Aug-00	1:1	49	48	>2419.2	36	8	75.9		
345	Lincoln Village West	12-Sep-00	10:36	COL120900LNVW-MB1	36.00	11:35	12-Sep-00	35.00	9:30	13-Sep-00	1:1	49	37	920.8	19	7	32.4		
346	Lincoln Village West	21-Sep-00	10:36	COL210900LNVW-MB1	35.50	12:45	21-Sep-00	35.00	9:00	22-Sep-00	1:1	49	48	>2419.2	48	17	238.2	38°00.008'	121°22.185'
347	Lincoln Village West	03-Oct-00	11:54	COL031000LNVW-MB1	35.00	13:52	03-Oct-00	34.50	10:00	04-Oct-00	10:1	49	25	4611	5	0	52		
348	Lincoln Village West	02-Nov-00	10:45	COL021100LNVW-SH1	35.00	12:25	02-Nov-00	34.50	9:00	03-Nov-00	10:1	45	11	1396	4	1	52	37°59.963'	121°22.190'
349	Lincoln Village West	10-Nov-00	10:40	COL101100LNVW-MB1	35.00	13:00	10-Nov-00	34.50	9:15	11-Nov-00	10:1	48	16	2282	6	2	84	38°00.009'	121°22.185'
350	Lincoln Village West	30-Nov-00	10:15	COL301100LNVW-MB1	35.00	11:50	30-Nov-00	35.00	9:00	01-Dec-00	10:1	22	6	364	2	1	30	38°00.078'	121°22.181'
351	Lincoln Village West	25-Jan-01	11:36	COL250101LNVW-MB1	35.00	13:20	25-Jan-01	35.00	9:00	26-Jan-01	10:1	25	3	379	8	0	86	38°00.077'	121°22.201'
352	Lost Isle	30-Jun-00	10:30	COL030600LSTS-JF	35.50	12:00	30-Jun-00	35.00	9:45	01-Jul-00	1:1	49	48	>2419.2	18	1	23.1		
353	Lost Isle	04-Jul-00	13:25	COL040700LSTS-BJ	35.00	16:45	04-Jul-00	35.00	14:30	05-Jul-00	1:1	49	45	1732.87	32	9	64.5		
354	Lost Isle	17-Oct-00	15:45	COL171000LSTS-MB1	33.50	17:25	17-Oct-00	36.00	14:45	18-Oct-00	10:1	43	10	117.8	1	0	10	37°59.964'	121°27.012'
355	Mokelumne River @ B & W Marina	14-Nov-00	11:10	COL141100MKLM-MB1	35.00	13:35	14-Nov-00	35.00	9:30	15-Nov-00	10:1	30	13	657	3	0	31	38°07.640'	121°34.792'
356	Mossdale Marina	19-Sep-00	11:45	COL190900MSSD-MB1	35.00	14:00	19-Sep-00	35.00	10:00	20-Sep-00	1:1	49	48	>2419.2	14	0	16.1	37°47.185'	121°18.446'
357	Oakwood lake	19-Sep-00	11:20	COL190900OKWD-MB1	35.00	14:00	19-Sep-00	35.00	10:00	20-Sep-00	1:1	49	47	2419.17	16	2	21.3		
358	Old River @ Heinbockle Harbor	07-Nov-00	13:10	COL071100OLDR-MB1	35.00	15:00	07-Nov-00	35.00	13:00	08-Nov-00	10:1	49	32	6867	3	0	31	37°48.292'	121°26.976'
359	Old River @ Holland Riverside	09-Nov-00	12:50	COL091100OLDR-SH1	35.00	14:30	09-Nov-00	35.00	9:30	10-Nov-00	10:1	21	0	265	3	0	31	37°58.352'	121°34.928'
360	Old River @ Rock Barrier	16-Nov-00	9:50	COL161100OLDR-SH1	0.57	0:00	16-Nov-00	0.40	0:00	17-Nov-00	10:1	46	10	1467	1	1	20	37°48.469'	121°19.672
361	Old River @ Rock Barrier	16-Nov-00	9:50	COL161100OLDR-SH2	0.54	0:00	16-Nov-00	0.38	0:00	17-Nov-00	10:1	49	16	2755	4	0	41	37°48.469'	121°19.672
362	Old River @ Stewart Rd.	16-Nov-00	10:25	COL161100OLDR-SH4	35.00	13:00	16-Nov-00	35.00	9:00	17-Nov-00	10:1	49	22	3873	1	0	10	37°48.874'	121°22.893
363	Old River @ Stewart Rd.	16-Nov-00	10:25	COL161100OLDR-SH3	35.00	13:40	16-Nov-00	35.00	9:30	17-Nov-00	10:1	43	8	1112	2	0	20	37°48.874'	121°22.893
364	Paradise Cut @ Paradise Cut Road	16-Nov-00	10:45	COL161100PRDS-SH2	35.00	13:00	16-Nov-00	35.00	9:00	17-Nov-00	10:1	49	15	2613	3	1	41	37°48.068'	121°22.039'
365	Paradise Cut @ Paradise Cut Road	16-Nov-00	10:45	COL161100PRDS-SH1	35.00	13:40	16-Nov-00	35.00	9:30	17-Nov-00	10:1	37	7	776	5	1	63	37°48.068'	121°22.039'
366	Paradise Point Marina	04-Jul-00	14:10	COL040700PRDS-BJ	35.00	16:45	04-Jul-00	35.00	14:30	05-Jul-00	1:1	49	48	>2419.2	8	0	8.6		
367	Paradise Point Marina	16-Jul-00	11:35	COL160700PRDS-BJ	35.00	14:30	16-Jul-00	35.00	12:00	17-Jul-00	1:1	49	45	1732.87	9	0	9.8		
368	Paradise Point Marina	15-Aug-00	11:06	COL150800PRDS-JL1	35.00	14:20	15-Aug-00	35.00	10:30	16-Aug-00	1:1	49	48	>2419.2	14	3	19.7	38°02.671'	121°25.166'
369	Paradise Point Marina	29-Aug-00	12:30	COL290800PRDS-MB1	35.00	14:00	29-Aug-00	35.50	10:00	30-Aug-00	1:1	49	48	>2419.2	37	8	79.8		
370	Paradise Point Marina	03-Oct-00	11:26	COL031000PRDS-SH1	35.00	13:52	03-Oct-00	34.50	10:00	04-Oct-00	10:1	45	9	1313	0	0	0	38°02.576'	121°25.043'
371	Potato Slough	12-Oct-00	12:05	COL121000PTTS-MB1	35.00	15:10	12-Oct-00	35.00	11:10	13-Oct-00	20:1	17	10	658	0	0	0	38°05.045'	121°32.293'
372	Sacramento River @ Rio Vista Boat Launch	14-Nov-00	10:45	COL141100SCRM-MB1	35.00	13:35	14-Nov-00	35.00	9:30	15-Nov-00	10:1	34	8	689	3	0	3.1	38°09.267'	121°41.403'
373	San Joaquin River @ Beach	08-Jun-00	10:35	COL080600SNJQ-RK1	35.00	11:45	08-Jun-00	35.00	9:00	09-Jun-00	1:1	49	48	>2419.2	13	0	14.8		
374	San Joaquin River @ Beach	09-Jun-00	10:55	COL090600SNJQ-RK1	35.00	11:45	09-Jun-00	35.00	9:30	10-Jun-00	1:1	49	48	>2419.2	17	3	24		
375	San Joaquin River @ Beach	11-Sep-00	10:00	COL110900SNJQ-MB1	35.00	14:00	11-Sep-00	35.00	10:00	12-Sep-00	1:1	49	48	>2419.2	7	0	7.4		
376	San Joaquin River @ Confluence of French Camp Slough	23-Oct-00	11:03	COL231000SNJQ-MB2	35.00	15:35	23-Oct-00	35.60	13:30	24-Oct-00	10:1	49	36	8660	13	1	160	37°55.217'	121°19.128'

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	Site	Date	Collect time	Sample ID#	Start Temp	Start Time	Start Date	End Temp	End Time	End Date	Ratio	Large Wells Total	Small Wells Total	MPN total	Large Wells E. coli	Small Wells E. coli	MPN E. coli	Northing	Westing
377	San Joaquin River @ Confluence of French Camp Slough	17-Nov-00	10:30	COL171100SNJQ-MB1	35.00	11:45	17-Nov-00	35.50	8:45	18-Nov-00	10:1	42	16	1301	2	0	20	37°55.213'	121°19.129'
378	San Joaquin River @ MUD Downstream	05-Sep-00	10:35	COL050900SNJQ-MB2	35.00	12:10	05-Sep-00	35.00	9:10	06-Sep-00	1:1	49	48	>2419.2	42	11	113.7		
379	San Joaquin River @ MUD Downstream	11-Sep-00	10:30	COL110900SNJQ-MB2	35.00	12:15	11-Sep-00	35.00	9:00	12-Sep-00	1:1	49	48	>2419.2	29	0	41.6	37°56.353'	121°20.611'
380	San Joaquin River @ MUD Downstream	19-Sep-00	12:45	COL190900SNJQ-MB1	35.00	13:30	19-Sep-00	35.00	9:30	20-Sep-00	1:1	49	48	>2419.2	29	2	44.8		
381	San Joaquin River @ MUD Downstream	09-Oct-00	11:15	COL091000SNJQ-MB3	34.00	12:40	09-Oct-00	34.50	10:00	10-Oct-00	10:1	49	47	24191.7	5	3	84	37°56.498'	121°20.748
382	San Joaquin River @ MUD Downstream	31-Oct-00	11:25	COL311000SNJQ-SH3	35.00	13:00	31-Oct-00	35.00	10:30	01-Nov-00	20:1	49	24	8704	10	4	310	37°56.572'	121°20.708'
383	San Joaquin River @ MUD Downstream	17-Nov-00	10:55	COL171100SNJQ-MB4	35.00	11:45	17-Nov-00	35.00	8:45	18-Nov-00	10:1	40	9	959	2	0	20	37°56.530'	121°20.758'
384	San Joaquin River @ MUD Downstream	17-Nov-00	10:55	COL171100SNJQ-MB3	35.00	11:45	17-Nov-00	35.00	8:45	18-Nov-00	10:1	44	13	1374	2	1	30	37°56.530'	121°20.758'
385	San Joaquin River @ MUD Outfall	24-May-00	9:58	COL240500SNJQ-RK1	36.00	11:15	24-May-00	35.50	8:30	25-May-00	1:1	49	48	>2419.2	27	7	48.1		
386	San Joaquin River @ MUD Outfall	17-Aug-00	11:03	COL170800SNJQ-JL1	35.00	11:25	17-Aug-00	35.00	10:30	18-Aug-00	1:1	49	48	>2419.2	11	0	12.2	37°56.130'	121°19.860'
387	San Joaquin River @ MUD Outfall	24-Aug-00	10:57	COL240800SNJQ-DW1	35.00	12:13	24-Aug-00	35.00	8:50	25-Aug-00	1:1	49	48	>2419.2	24	4	37.3	37°58.293'	121°20.146'
388	San Joaquin River @ MUD Outfall	26-Sep-00	10:40	COL260900SNJQ-DR1	35.00	12:30	26-Sep-00	35.00	9:00	27-Sep-00	10:1	49	45	17328.7	6	0	63	37°56.295'	121°20.159
389	San Joaquin River @ MUD Outfall	09-Oct-00	11:10	COL091000SNJQ-MB2	34.00	12:40	09-Oct-00	34.50	10:00	10-Oct-00	10:1	49	47	24191.7	6	1	74	37°56.283'	121°20.136'
390	San Joaquin River @ MUD Outfall	23-Oct-00	10:45	COL231000SNJQ-MB1	35.00	15:35	23-Oct-00	35.60	13:30	24-Oct-00	10:1	49	39	10462.4	2	0	20	37°56.307'	121°20.150
391	San Joaquin River @ MUD Outfall	31-Oct-00	11:15	COL311000SNJQ-SH2	35.00	13:00	31-Oct-00	35.00	10:30	01-Nov-00	20:1	49	24	8704	3	0	60	37°56.283'	121°20.146'
392	San Joaquin River @ MUD Outfall	31-Oct-00	11:15	COL311000SNJQ-SH1	35.00	13:00	31-Oct-00	35.00	10:30	01-Nov-00	20:1	49	16	5510	1	1	40	37°56.283'	121°20.146'
393	San Joaquin River @ MUD Outfall	17-Nov-00	10:45	COL171100SNJQ-MB2	35.00	11:45	17-Nov-00	35.50	8:45	18-Nov-00	10:1	47	19	2224	2	0	20	37°56.289'	121°20.137'
394	San Joaquin River @ MUD Outfall	15-Mar-01	11:50	COL150301SNJQ-LC1	35.00	14:30	15-Mar-01	35.00	9:30	16-Mar-01	20:1	21	4	636	2	0	40		
395	San Joaquin River @ MUD Upstream	24-May-00	10:03	COL240500SNJQ-RK2	36.00	11:15	24-May-00	35.50	8:30	25-May-00	1:1	49	48	>2419.2	32	3	53.8		
396	San Joaquin River @ MUD Upstream	05-Sep-00	10:30	COL050900SNJQ-MB1	35.00	12:10	05-Sep-00	35.00	9:10	06-Sep-00	1:1	49	48	>2419.2	40	9	95.9		
397	San Joaquin River @ MUD Upstream	09-Oct-00	11:00	COL091000SNJQ-MB1	34.00	12:40	09-Oct-00	34.50	10:00	10-Oct-00	10:1	49	46	19862.8	5	0	52	37°55.780'	121°19.675'
398	San Joaquin River @ Navy Drive	30-Nov-00	9:45	COL301100SNJQ-MB1	35.00	11:50	30-Nov-00	35.00	9:00	01-Dec-00	10:1	49	44	15530.7	47	12	1723	37°56.803'	121°20.314'
399	San Joaquin River @ Port	17-Oct-00	18:15	COL171000SNJQ-MB1	33.50	17:25	17-Oct-00	36.00	14:45	18-Oct-00	10:1	49	42	12996.5	5	0	52	37°57.054'	121°20.143'
400	South Fork Mokelumne @ Westgate	14-Nov-00	11:35	COL141100MKLM-MB2	35.00	13:35	14-Nov-00	35.00	9:30	15-Nov-00	10:1	17	2	228	0	0	<10	38°07.390'	121°39.544'
401	Sycamore @ Guard Rd.	14-Nov-00	12:00	COL141100SYCM-MB1	35.00	13:35	14-Nov-00	35.00	9:30	15-Nov-00	10:1	48	14	2098	12	1	146	38°08.270'	121°25.276'
402	Telephone Cut	15-Aug-00	12:16	COL150800TLPH-JL1	35.00	14:20	15-Aug-00	34.50	10:30	16-Aug-00	1:1	49	48	>2419.2	18	1	23.1	38°04.346'	121°23.552'
403	Temple @ Mariposa	15-Nov-00	10:45	DRY151100TMPL-MB1	35.00	12:30	15-Nov-00	35.00	8:15	16-Nov-00	50:1	44	5	5430	0	0	<50	37°52.710'	121°05.226'
404	Tiki Lagun	22-Aug-00	11:20	COL220800TKLG-JL1	35.00	16:00	22-Aug-00	35.50	13:00	23-Aug-00	1:1	49	47	2419.17	6	0	6.3	37°58.700'	121°28.406'
405	Tiki Lagun	14-Sep-00	10:43	COL140900TKLG-SP1	35.00	12:00	14-Sep-00	36.00	10:00	15-Sep-00	1:1	49	43	1413.6	9	1	9.8		
406	Tiki Lagun	02-Oct-00	11:13	COL021000TKLG-MB2	35.00	12:45	02-Oct-00	35.00	9:05	03-Oct-00	10:1	46	17	1842	2	0	20	37°58.877'	121°28.383'
407	Tiki Lagun	02-Oct-00	11:02	COL021000TKLG-MB1	35.00	12:45	02-Oct-00	35.00	9:05	03-Oct-00	10:1	43	10	1178	4	0	41	37°58.702'	121°28.411'
408	Tiki Lagun	22-Mar-01	11:00	COL210301TKLG-LC-1	35.00	13:30	22-Mar-01	35.00		23-Mar-01	20:1	37	5	1466	0	0	<20		
409	Tinsley isle	16-Jul-00	12:40	COL160700TNSL-BJ	35.00	14:30	16-Jul-00	35.00	12:00	17-Jul-00	1:1	49	45	1732.87	28	10	55.2		
410	Tower Park	13-Oct-00	10:40	COL131100TWRP-MB1	35.00	13:55	13-Oct-00	35.00	10:00	14-Oct-00	20:1	40	3	1618	3	0	62	38°06.593'	121°29.998'
411	Tower Park	14-Oct-00	15:55	COL141000TWRP-MB1	35.00	17:20	14-Oct-00	35.00	14:45	15-Oct-00	1:1	49	48	>2419.2	49	18	307.6	38°06.593'	121°30.000'
412	Turner Cut	22-Aug-00	11:30	COL220800TRNR-JL1	35.00	16:00	22-Aug-00	35.50	13:00	23-Aug-00	1:1	49	48	>2419.2	8	1	9.7	37°58.870'	121°28.393'
413	Turner Cut	14-Sep-00	10:54	COL140900TRNR-SP1	35.00	12:00	14-Sep-00	36.00	10:00	15-Sep-00	1:1	49	48	>2419.2	11	1	13.4		
414	Turner Cut	14-Sep-00	11:00	COL140900TRNR-SP2	35.00	12:00	14-Sep-00	36.00	10:00	15-Sep-00	1:1	49	46	1986.28	12	1	14.6		
415	Turner Cut	02-Oct-00	10:48	COL021000TRNR-MB1	35.00	12:45	02-Oct-00	35.00	9:05	03-Oct-00	10:1	44	8	1187	2	0	20	37°58.997'	121°28.350'
416	Turner Cut	21-Mar-01	11:15	COL210301TRNR-LC1	35.00	13:30	21-Mar-01	35.00	10:30	22-Mar-01	20:1	35	3	1248	0	0	<20		
417	Vacant Lot	12-Oct-00	16:05	COL121000VCNT-MB1	35.00	17:30	12-Oct-00	35.00	13:30	13-Oct-00	20:1	49	48	>48384	49	37	18416	37°57.167'	121°18.127'
418	Weber Point	12-Oct-00	16:30	COL121000WBRP-MB1	35.00	17:30	12-Oct-00	35.00	13:30	13-Oct-00	20:1	49	48	>48384	49	16	5510	37°57.221'	121°17.553'
419	Whiskey Slough Harbor	22-Aug-00	10:53	COL220800WHSK-JL1	35.00	16:00	22-Aug-00	35.50	13:00	23-Aug-00	1:1	49	48	>2419.2	15	2	19.9	37°56.134'	121°25.956'
420	Whiskey Slough Harbor	02-Oct-00	10:40	COL021000WHSK-MB1	35.00	12:45	02-Oct-00	35.00	9:05	03-Oct-00	1:1	45	16	1624	7	0	74	37°56.127'	121°25.949'
421	White Slough	12-Oct-00	11:20	COL121000WHTS-MB1	35.00	15:10	12-Oct-00	35.00	11:10	13-Oct-00	20:1	23	4	708	1	0	20	38°04.124'	121°27.602
422	Windmill Cove	02-May-00	12:00	COL020500WNDM-RK1	35.50	13:30	02-May-00	35.50	9:30	03-May-00	1:1	49	46	1986.27	38	6	79.4		
423	Windmill Cove	01-Jun-00	10:15	COL010600WNDM-RK	35.00	11:30	01-Jun-00	35.50	7:10	02-Jun-00	1:1	49	48	>2419.2	31	5	54.6		
424	Windmill Cove	13-Jun-00	9:47	COL130600WNDM-JF1	35.00	13:00	13-Jun-00	35.00	10:00	14-Jun-00	1:1	49	48	>2419.2	48	18	248.9		
425	Windmill Cove	21-Jun-00	11:10	COL210600WNDM-JF1	35.50	14:00	21-Jun-00	35.00	10:00	22-Jun-00	1:1	49	48	>2419.2	26	3	39.9		
426	Windmill Cove	30-Jun-00	10:15	COL030600WNDM-JF	35.50	12:00	30-Jun-00	35.00	9:45	01-Jul-00	1:1	49	48	>2419.2	48	20	272.3		
427	Windmill Cove	04-Jul-00	15:35	COL040700WNDM-MB	35.00	16:45	04-Jul-00	35.00	14:30	05-Jul-00	1:1	49	48	>2419.2	47	12	172.3		
428	Windmill Cove	06-Jul-00	11:05	COL060700WNDM-JF	35.00	12:00	06-Jul-00	35.00	12:00	07-Jul-00	1:1	49	48	>2419.2	39	7	86		
429	Windmill Cove	16-Jul-00	10:20	COL160700WNDM-BJ	35.00	14:30	16-Jul-00	35.00	12:00	17-Jul-00	1:1	49	48	>2419.2	47	21	240		
430	Windmill Cove	28-Jul-00	10:30	COL280700WNDM-JL1	35.00	12:30	28-Jul-00	35.00	9:30	29-Jul-00	1:1	49	48	>2419.2	48	14	209.8		

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	Site	Date	Collect time	Sample ID#	Start Temp	Start Time	Start Date	End Temp	End Time	End Date	Ratio	Large Wells Total	Small Wells Total	MPN total	Large Wells E. coli	Small Wells E. coli	MPN E. coli	Northing	Westing
431	Windmill Cove	09-Aug-00	14:30	COL090800WNDM-JL2	35.00	16:30	09-Aug-00	35.50	13:40	10-Aug-00	1:1	49	48	>2419.2	10	0	11	37*59.361'	121*24.551'
432	Windmill Cove	09-Aug-00	12:45	COL090800WNDM-JL1	35.00	16:30	09-Aug-00	35.50	13:40	10-Aug-00	1:1	49	48	>2419.2	12	2	14.6	37*59.357'	121*24.550'
433	Windmill Cove	15-Aug-00	13:12	COL150800WNDM-JL1	35.00	14:20	15-Aug-00	35.50	10:30	16-Aug-00	1:1	49	48	>2419.2	22	3	32.3	39*59.358'	121*24.545'
434	Windmill Cove	22-Aug-00	12:00	COL220800WNDM-JL1	35.00	16:00	22-Aug-00	34.60	13:00	23-Aug-00	1:1	49	47	2419.17	8	0	8.6	37*59.334	121*24.559'
435	Windmill Cove	18-Sep-00	10:00	COL180900WNDM-	35.00	12:30	18-Sep-00	35.00	9:00	19-Sep-00	1:1	49	45	1732.87	5	0	5.2		
436	Windmill Cove	02-Oct-00	11:35	COL021000WNDM-	35.00	12:45	02-Oct-00	35.00	9:05	03-Oct-00	1:1	47	25	2809	1	0	10	37*59.359'	121*24.555'
437	Windmill Cove	02-Nov-00	11:25	COL021100WNDM-SH1	35.00	12:25	02-Nov-00	34.50	9:00	03-Nov-00	10:1	48	19	2602	3	1	41	37*59.407'	121*24.521'
438	Windmill Cove	20-Nov-00	10:00	COL201100WNDM-	35.00	12:15	20-Nov-00	35.00	8:00	21-Nov-00	10:1	49	22	3873	30	9	588	37*59.354'	121*24.553'
439	Windmill Cove	25-Jan-01	10:50	COL250101WNDM-	35.00	13:20	25-Jan-01	35.00	9:00	26-Jan-01	10:1	14	1	173	0	1	10	37*59.417'	121*24.516'
440	Windmill Cove	07-Mar-01	11:00	COL070301WNDM-LC1	35.00	13:15	07-Mar-01	35.00	10:30	08-Mar-01	20:1	49	9	3912	17	1	406		
441	Windmill Cove	21-Mar-01	10:35	COL210301WNDM-LC1	35.00	13:30	21-Mar-01	35.00	10:30	22-Mar-01	20:1	49	33	14540	12	0	270		
442																			

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

Total Maximum Daily Load Report For Pathogens In:

Five-Mile Slough, Lower Calaveras River, Mormon Slough, Mosher Slough, Smith Canal and Walker Slough

APPENDIX A
UNPUBLISHED WATER QUALITY DATA

Unpublished Deltakeeper Data

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Location	Date	MPN total	MPN E coli
Avena drain @ Carrothan			
	08-Nov-00	241917	1350
	03-Nov-00	38730.00	740
	25-Oct-00	>2419.2	>2419.20
Avena drain @ Murphy			
	25-Oct-00	>2419.20	1,732.87
Avena Drain @ Van Allen Rd.			
	29-Jun-01	> 24,192.00	6131
Bear Creek @ I-5			
	08-Jan-01	328	31
Bear Creek @ Laughlin Park			
	06-Jan-05	6,294	345
	20-Dec-04	2613	120
	15-Dec-04	2,481	31
	13-Dec-04	3,448	20
	07-Dec-04	24,192	2,382
	27-Oct-04	24,192	2,723
	30-Sep-04	>24192	121
	22-Sep-04	>24,192	833
	15-Sep-04	14,136	31
	01-Sep-04	24,192	63
	27-Jul-04	15531	201
	19-Jul-04	19863	63
	19-Jul-04	24192	31
	12-Jul-04	>24,192	52
	05-Jul-04	12,997	52
	01-Jul-04	19,863	62
	25-May-04	6131	265
	21-May-04	9804	504
	17-May-04	9804	563
	17-May-04	12997	578
	12-May-04	4,352	156
	03-May-04	6,867	259
	26-Mar-04	>24192	>24192
	26-Mar-04	>24192	>24192

Location	Date	MPN total	MPN E coli
	09-Feb-04	907	<10
	06-Feb-04	19,862.8	2,602
	05-Feb-04	24192	7701
	04-Feb-04	>24,192	3,282
	15-Apr-03	>24192	240
	14-Apr-03	24192	712
	27-Mar-03	3654	86
	27-Dec-02	3282	73
Bear Creek @ Thornton Rd.			
	28-Jun-01	> 24,192.00	411
	12-Apr-01	8212	<20
	05-Dec-00	5172	374
Beaver Slough @ Blossom Road			
	14-Nov-00	323	<10
Bethany Reservoir State Rec. Area			
	07-Nov-00	1354	203
Bethel Island @ Anchor Marine Pump Station			
	15-Aug-02	12996.5	31
Bethel Island @ Bethel Harbor			
	09-Nov-00	171	20
Bethel Island @ Dutch Slough			
	09-Nov-00	472	<10
Bethel Island @ Frank's Cove			
	09-Nov-00	298	41
Bethel Island @ Russo's Marina			
	09-Nov-00	171	20
	09-Nov-00	201	10
Blank			
	24-Nov-03	<10	<10
	12-Nov-03	<10	<10
	15-Apr-03	<10	<10
	14-Apr-03	<10	<10
	08-Apr-03	<10	<10
	04-Apr-03	<10	<10

Location	Date	MPN total	MPN E coli
	09-Aug-00	2419.17	49.6
	09-Aug-00	> 2,419.20	48
	13-Jun-00	> 2,419.20	88.4
	02-May-00	1732.87	35.9
	25-Apr-00	1119.85	57.6
Calaveras River @ DeltaKeeper's Dock			
	03-Oct-00	2063	96
	12-Sep-00	> 2,419.20	51.2
	18-Aug-00	> 2,419.20	26.5
	28-Jul-00	> 2,419.20	75.3
	21-Jun-00	> 2,419.20	46.6
Calaveras River @ Diverting canal			
	27-Oct-04	24,192	754
Calaveras River @ DK Dock			
	26-May-05	2014	74
	26-May-05	2755	52
	26-May-05	3255	86
	06-Jan-05	>24,192	187
	27-Dec-04	794	120
	20-Dec-04	862	63
	20-Dec-04	1081	20
	13-Dec-04	2,143	85
	07-Dec-04	>24,192	759
	27-Oct-04	24,192	441
	27-Oct-04	24,192	6,488
	30-Sep-04	9208	98
	22-Sep-04	14,136	110
	15-Sep-04	3448	20
	01-Sep-04	4,352	20
	01-Sep-04	3,448	41
	27-Jul-04	11,199	63
	19-Jul-04	11199	10
	12-Jul-04	>24,192	30
	05-Jul-04	>24,192	51
	01-Jul-04	14,136	73

Location	Date	MPN total	MPN E coli
	01-Jul-04	11,192	86
	25-May-04	3,873	20
	21-May-04	2481	63
	17-May-04	3076	10
	12-May-04	2,247	20
	03-May-04	3251	10
	08-Apr-03	1137	41
	27-Mar-03	1842	31
Calaveras River @ El Dorado			
	11-Dec-03	24,192	3,873
Calaveras River @ UOP			
	04-Feb-04	24,192	6,867
Calaveras River @ UOP footbridge			
	26-Mar-04	7701	109
	09-Feb-04	3255	63
	06-Feb-04	9,804	479
	02-Feb-04	4,106	52
	14-Apr-03	>24192	3609
	27-Mar-03	2755	145
	31-May-02	10462.4	52
	20-May-02	> 24,192.00	1872
	14-May-02	64880	49.5
	09-May-02	3076	233
	02-May-02	2613	74
	25-Apr-02	4106	52
	18-Apr-02	6488	74
	11-Apr-02	9804	472
	29-Mar-02	7270	203
	20-Mar-02	3448	20
	14-Mar-02	2282	84
	08-Mar-02	> 24,192.00	> 24,192.00
	04-Mar-02	985	<10
	24-Feb-02	1904	52
	14-Feb-02	2755	<10
	11-Feb-02	24192	85

Location	Date	MPN total	MPN E coli
Calaveras River @ UOP	08-Feb-02	4884	63
	28-Jan-02	10111	185
	24-Jan-02	6488	20
	20-Jul-01	12996.5	294
	07-Jul-01	2909	52
	28-Jun-01	> 24,192.00	218
	30-May-01	4611	97
	21-Apr-01	48384	1302
	12-Apr-01	17328	104
	26-Mar-01	> 48,384.00	1768
	20-Mar-01	2909	63
	14-Mar-01	900	40
	05-Mar-01	39725.6	8212
	11-Feb-01	> 48,384.00	1694
	10-Feb-01	> 48,384.00	1024
	24-Jan-01	> 24,192.00	2507
	11-Jan-01	> 24,192.00	1014
	08-Jan-01	> 24,192.00	2249
	06-Dec-00	988	10
	28-Nov-00	19862.8	185
	21-Nov-00	6131	107
	21-Nov-00	7270	31
	11-Nov-00	9208	120
	30-Oct-00	> 120,960.00	4670
	19-Oct-00	12033.1	84
	11-Oct-00	> 48,384.00	34657.4
	04-Oct-00	6131	109
	20-Sep-00	> 2,419.20	98.5
	28-Aug-00	> 2,419.20	298.7
	22-Aug-00	> 2,419.20	206.3
	14-Aug-00	> 2,419.20	107.6
	07-Aug-00	> 2,419.20	95.9
Dad's Point			
	01-Jun-04	9,804	62
Delta Yacht Club			
	24-Sep-02	1187	<10

Location	Date	MPN total	MPN E coli
	21-May-04	<10	<10
	17-May-04	<10	<10
	03-May-04	<1	<1
	28-Aug-03	<10	<10
Dredger cut			
	15-Aug-00	> 2,419.20	58.8
Duck Creek @ Pock Lane			
	12-Apr-01	2626	<20
	07-Aug-00	> 2,419.20	103.9
DWC@Dad's Point			
	14-Oct-03	2,310	<10
Five Mile Slough			
	31-May-02	6488	171
	02-May-02	3130	10
	18-Apr-02	3873	<10
	21-Apr-01	> 48,384.00	2320
Five Mile Slough @ Alexandria			
	07-Dec-04	>24,192	583
	08-Mar-02	> 24,192.00	364
	04-Mar-02	3873	63
	24-Feb-02	3448	30
Five mile slough @ Leesburg PL			
	02-Feb-04	6,131	<10
Five Mile Slough @ plymouth			
	27-Oct-04	24,192	24,192
	15-Sep-04	4,106	31
	01-Jul-04	19,863	90
	06-Feb-04	7,270	86
	04-Feb-04	24,192	1,119
	20-May-02	24192	> 24,192.00
	14-May-02	3873	<10
	09-May-02	4611	98
	25-Apr-02	10462.4	253
	11-Apr-02	24192	41
	29-Mar-02	6867	161

Location	Date	MPN total	MPN E coli
Five mile Slough @ Plymouth	22-Mar-02	1956	10
	20-Mar-02	14136	185
	14-Mar-02	> 24,192.00	223
	14-Feb-02	8664	86
	11-Feb-02	3873	52
	28-Jan-02	> 24,192.00	2143
	20-Jul-01	12996.5	<10
	07-Jul-01	> 24,192.00	10
	28-Jun-01	24191.7	31
	30-May-01	7270	63
	21-Apr-01	48384	2320
	12-Apr-01	25993	82
	26-Mar-01	> 48,384.00	2356
	20-Mar-01	2851	10
	14-Mar-01	18416	500
	05-Mar-01	48,383.4	34.5
	11-Feb-01	24593	896
	10-Feb-01	22397	196
	02-Feb-01	12262	244
	27-Jan-01	3873	146
	24-Jan-01	> 24,192.00	416
	10-Jan-01	> 24,192.00	19862
	08-Jan-01	> 24,192.00	7270
	05-Dec-00	419	<10
	28-Nov-00	341	<10
	21-Nov-00	697	20
	21-Nov-00	738	<10
	11-Nov-00	3130	20
	30-Oct-00	64982.5	855
	19-Oct-00	9804	211
	11-Oct-00	> 48,384.00	> 48,384.00
	10-Oct-00	> 24,192.00	11198.5
	04-Oct-00	> 24,192.00	<10
	20-Sep-00	> 2,419.20	10.9
	28-Aug-00	> 2,419.20	61.3
	22-Aug-00	2419.17	7.4

Location	Date	MPN total	MPN E coli
	18-Aug-00	> 2,419.20	5.2
	14-Aug-00	> 2,419.20	47.1
	07-Aug-00	2419.17	33.6
	07-Aug-00	> 2,419.20	15.8
	10-May-00	> 2,419.20	378.4
	26-Apr-00	2419.17	24.6
Five Mile Slough @Plymouth			
	08-Feb-02	24191.7	627
Five-Mile Slough @ Plymouth			
	06-Jan-05	3,873	63
	27-Dec-04	1017	<10
	20-Dec-04	7701	41
	13-Dec-04	2,602	31
	30-Sep-04	17,329	145
	22-Sep-04	>24,192	>24,192
	01-Sep-04	3,448	20
	27-Jul-04	17329	41
	27-Jul-04	17329	41
	19-Jul-04	10462	10
	12-Jul-04	>24192	85
	05-Jul-04	5,475	41
	25-May-04	3,873	52
	21-May-04	5794	20
	21-May-04	6131	52
	17-May-04	7701	183
	12-May-04	5,475	63
	03-May-04	4,352	0
	26-Mar-04	>24192	>24192
	09-Feb-04	2046	<10
	15-Apr-03	24192	368
	14-Apr-03	24192	1918
Fourteen Mile Slough @ Bora Bora			
	30-May-04	1,918	20
	30-May-04	5,475	10
	27-May-04	7270	20

Location	Date	MPN total	MPN E coli
	25-Feb-03	203	10
Lost Isle			
	01-Jun-04	4,884	<10
	27-May-04	5172	10
Lost Isle Field Duplicate			
	01-Jun-04	5,475	31
McLeod Lake			
	28-Aug-03	9208	74
	27-Mar-03	4884	73
	31-May-02	4352	85
	20-May-02	> 24,192.00	2012
	14-May-02	> 24,192.00	7.4
	09-May-02	1467	10
	02-May-02	19862.8	1455
	25-Apr-02	738	41
	18-Apr-02	24192	3448
	11-Apr-02	662	72
	29-Mar-02	4611	670
	22-Mar-02	24192	5794
	20-Mar-02	7270	81
	15-Mar-02	7270	109
	26-Feb-02	98.8	52
	11-Feb-02	> 24,192.00	11198.5
	04-Feb-02	> 24,192.00	1259
	01-Feb-02	> 24,192.00	3654
	07-Jan-02	> 24,192.00	3873
	04-Jan-02	> 24,192.00	2098
	27-Dec-01	2077	110
	20-Dec-01	> 24,192.00	581
	13-Dec-01	12033.1	70
	04-Dec-01	> 24,192.00	749
	29-Nov-01	24192	8164
	20-Nov-01	12996.5	416
	15-Nov-01	> 24,192.00	2909
	15-Aug-01	> 24,192.00	10

Location	Date	MPN total	MPN E coli
McLeod Lake	15-Aug-01	17329	1354
	20-Jul-01	2359	10
	16-Jul-01	3873	20
	07-Jul-01	17329	31
	28-Jun-01	> 24,192.00	8164
	26-Jun-01	826	<20
	30-May-01	2046	<10
	18-May-01	4106	10
	12-Apr-01	12262	82
	26-Mar-01	> 48,384.00	2422
	22-Mar-01	439	10
	15-Mar-01	12976	104
	07-Mar-01	19608	790
	02-Feb-01	> 48,384.00	5818
	30-Nov-00	7701	185
	31-Oct-00	> 120,960.00	2355
	29-Oct-00	> 120,960.00	2955
	29-Oct-00	> 120,960.00	2600
	23-Oct-00	24191.7	216
	19-Oct-00	5172	86
	05-Oct-00	1607	20
	24-Aug-00	> 2,419.20	22.8
McLeod Lake @ Outfall			
	28-Aug-03	9,208	74
	15-Apr-03	24191.7	256
Mokelumne River @ B & W Marina			
	14-Nov-00	657	31
Mokelumne River South Fork @ Westgate La			
	14-Nov-00	228	<10
Mokolumne River @ Riverboat Marina II			
	03-May-02	657	62
Mormon Slough @ Lincoln			
	31-May-02	> 24,192.00	723
	20-May-02	> 24,192.00	2755
	14-May-02	> 24,192.00	2282

Location	Date	MPN total	MPN E coli
Mormon Slough @ Lincoln St.	09-May-02	4106	175
	02-May-02	2046	728
	25-Apr-02	4106	96
	18-Apr-02	> 24,192.00	24192
	11-Apr-02	3448	122
	29-Mar-02	> 24,192.00	6131
	22-Mar-02	9804	311
	20-Mar-02	> 24,192.00	512
	15-Mar-02	> 24,192.00	3255
	26-Feb-02	4611	223
	11-Feb-02	> 24,192.00	4611
	04-Feb-02	3448	108
	01-Feb-02	> 24,192	1515
	07-Jan-02	6893	135
	04-Jan-02	> 24,192.00	2613
	27-Dec-01	7915	161
	20-Dec-01	> 24,192.00	631
	12-Dec-01	9804	355
	04-Dec-01	> 24,192.00	2359
	29-Nov-01	> 24,192.00	> 24,192.00
	20-Nov-01	> 24,192.00	820
	15-Nov-01	> 24,192.00	4352
	20-Jul-01	> 2,419.20	1236
	07-Jul-01	> 24,192.00	959
	28-Jun-01	> 24,192.00	265
	30-May-01	9804	213
	21-Apr-01	> 48,384.00	48384
	12-Apr-01	> 48,384.00	623
	26-Mar-01	> 48,384.00	13734
	20-Mar-01	9804	1664
	14-Mar-01	28272	5226
	05-Mar-01	> 48,384.00	12262
	11-Feb-01	> 48,384.00	6260
	10-Feb-01	> 48,384.00	4718
	02-Feb-01	> 48,384.00	28272
	24-Jan-01	> 24,192.00	6488

Location	Date	MPN total	MPN E coli
Mormon Slough @ Lincoln St	11-Jan-01	> 24,192.00	5475
	08-Jan-01	> 24,192.00	8164
	06-Dec-00	1576	146
	22-Nov-00	> 24,192.00	> 24,192.00
	21-Nov-00	5794	160
	21-Nov-00	5475	156
	11-Nov-00	19862.8	624
	30-Oct-00	> 120,960.00	40820
	19-Oct-00	> 24,192.00	9850
	11-Oct-00	> 48,384.00	> 48,384.00
	04-Oct-00	8664	161
	29-Sep-00	19862.8	546
	20-Sep-00	> 2,419.20	74.9
	28-Aug-00	> 2,419.20	325.5
	22-Aug-00	> 2,419.20	613.1
	18-Aug-00	> 2,419.20	648.8
	14-Aug-00	> 2,419.20	344.8
	07-Aug-00	> 2,419.20	40
	09-Jun-00	> 2,419.20	17.5
	08-Jun-00	> 2,419.20	34.5
	06-Jun-00	> 2,419.20	21.6
Mormon Slough @ Lincoln St			
	06-Jan-05	>24,192	2909
	06-Jan-05	>24,192	2,602
	27-Dec-04	12,033	627
	20-Dec-04	>24,192	2,613
	13-Dec-04	5,475	464
	07-Dec-04	>24,192	9,208
	27-Oct-04	24,192	17,329
	30-Sep-04	>24192	>24192
	22-Sep-04	>24,192	24,192
	15-Sep-04	24,192	450
	01-Sep-04	>24,192	650
	27-Jul-04	>24192	529
	19-Jul-04	24,192	146
	12-Jul-04	>24192	703

Location	Date	MPN total	MPN E coli
Mormon Slough @ Lincoln Rd	05-Jul-04	15531	472
	01-Jul-04	24,192	389
	25-May-04	7,270	1,014
	25-May-04	7,701	712
	21-May-04	>24192	1723
	17-May-04	8164	547
	12-May-04	7,701	813
	03-May-04	>24,192	743
	26-Mar-04	>24192	6131
	09-Feb-04	9208	216
	06-Feb-04	24,192	1,658
	05-Feb-04	24192	3873
	04-Feb-04	24,192	5,794
	15-Apr-03	>24192	5172
	14-Apr-03	>24192	>24192
	27-Mar-03	10462.4	309
	01-Oct-704	24192	146
Mosher Slough @ Kelley Dr.			
	11-Apr-02	5794	98
	04-Mar-02	2755	98
	12-Apr-01	> 48,384.00	1142
	26-Mar-01	> 48,384.00	> 48,384.00
	20-Mar-01	6488	262
	14-Mar-01	2446	20
	05-Mar-01	> 48,384.00	12976
	11-Feb-01	> 48,384.00	2402
	10-Feb-01	> 48,384.00	1974
	24-Jan-01	10111	2700
	11-Jan-01	> 24,192.00	3968
	08-Jan-01	> 24,192.00	4106
	05-Dec-00	1624	109
	28-Nov-00	1789	85
	22-Nov-00	> 24,192.00	> 24,192.00
	21-Nov-00	2613	132
	21-Nov-00	1497	221
	11-Nov-00	> 24,192.00	187

Location	Date	MPN total	MPN E coli
	30-Oct-00	> 120,960.00	3540
	19-Oct-00	12996.5	373
	11-Oct-00	> 48,384.00	> 48,383.40
	04-Oct-00	15530.7	317
	20-Sep-00	> 2,419.20	648.8
	28-Aug-00	> 2,419.20	275.5
	22-Aug-00	> 2,419.20	124.6
	18-Aug-00	> 2,419.20	143
	14-Aug-00	> 2,419.20	488.4
	07-Aug-00	> 2,419.20	131.3
	24-May-00	> 2,419.20	435.2
	08-May-00	> 2,419.20	236.1
Mosher Slough @ Mariner's Dr.			
	06-Jan-05	6,131	145
	27-Dec-04	1396	95
	20-Dec-04	2755	98
	13-Dec-04	2,098	30
	07-Dec-04	>24,192	683
	07-Dec-04	>24,192	1,376
	27-Oct-04	24,192	697
	30-Sep-04	>24192	288
	22-Sep-04	>24,192	413
	22-Sep-04	>24,192	538
	15-Sep-04	21,492	143
	01-Sep-04	>24,192	345
	27-Jul-04	7270	213
	19-Jul-04	12997	496
	12-Jul-04	24,192	278
	12-Jul-04	24192	288
	05-Jul-04	8,664	52
	01-Jul-04	19,863	216
	25-May-04	9,208	262
	21-May-04	9208	197
	17-May-04	5172	226
	12-May-04	5172	231
	12-May-04	8164	185

Location	Date	MPN total	MPN E coli
Mosher Slough @ Hummels Dr.	03-May-04	15,531	520
	26-Mar-04	>24192	>24192
	09-Feb-04	6867	41
	06-Feb-04	7,215	148
	05-Feb-04	17328.7	368
	04-Feb-04	24,192	1,414
	02-Feb-04	3076	10
	15-Apr-03	>24192	624
	14-Apr-03	24192	7701
	27-Mar-03	6131	145
	31-May-02	15530.7	435
	20-May-02	> 24,192.00	9208
	14-May-02	12033.1	243
	09-May-02	4352	63
	02-May-02	6867	132
	25-Apr-02	7270	121
	18-Apr-02	> 24,192.00	> 24,192.00
	29-Mar-02	9208	262
	22-Mar-02	3873	20
	20-Mar-02	> 24,192.00	41
	14-Mar-02	7270	72
	08-Mar-02	24192	4360
	24-Feb-02	5172	52
	14-Feb-02	11198.5	209
	11-Feb-02	> 24,192.00	4884
	08-Feb-02	> 24,192.00	24191.7
	28-Jan-02	> 24,192.00	539
	24-Jan-02	2098	31
	20-Jul-01	12996.5	294
	07-Jul-01	8664	480
	28-Jun-01	> 24,192.00	794
	30-May-01	9208	86
	21-Apr-01	> 48,384.00	10344
	12-Jun-00	> 2,419.20	238.2
	09-May-00	> 2,419.20	435.2

Oakwood Lake

Location	Date	MPN total	MPN E coli
San Joaquin River Confluence @ French Ca			
	08-Apr-03	933	10
San Joaquin River Confluence@ French Cam			
	16-Jul-01	24191.7	638
Sand Mound Slough @ Carol's Harbor			
	15-Aug-02	11199	30
Sand Mound Slough @ Sam's Harbor			
	15-Aug-02	6131	41
SDWC Lost Isle			
	30-May-04	3,873	41
SDWC@ Dad's point			
	30-May-04	4,884	41
	27-May-04	4,106	31
SDWC@Dads Point			
	27-May-04	2,909	<10
SDWC@Riverpoint Marina			
	26-May-05	5475	272
	26-May-05	3130	441
	26-May-05	3448	195
Smith Canal @ Pershing Bridge			
	09-Feb-04	2359	183
	06-Feb-04	24191.7	1119
	05-Feb-04	24192	1842
	04-Feb-04	24,192	4,106
	15-Apr-03	24192	8664
	14-Apr-03	24192	24192
Smith Canal @ Yosemite Lake			
	26-Mar-04	>24192	>24192
	27-Mar-03	4352	240
	31-May-02	> 24,192.00	253
	20-May-02	> 24,192.00	15530.7
	14-May-02	> 24,192.00	2518
	09-May-02	6867	145
	02-May-02	> 24,192.00	1043

Location	Date	MPN total	MPN E coli
Smith canal @ Yosemite Lake	25-Apr-02	7701	271
	18-Apr-02	> 24,192.00	9804
	11-Apr-02	6131	63
	29-Mar-02	15530.7	638
	22-Mar-02	4106	292
	20-Mar-02	12996	309
	14-Mar-02	> 24,192.00	> 24,192.00
	14-Mar-02	7701	689
	14-Mar-02	> 24,192.00	> 24,192.00
	08-Mar-02	> 24,192.00	> 24,192.00
	04-Mar-02	1782	85
	24-Feb-02	3448	175
	14-Feb-02	2909	132
	11-Feb-02	14136	203
	08-Feb-02	> 24,192.00	749
	28-Jan-02	> 24,192.00	405
	24-Jan-02	12996.5	464
	20-Jul-01	14136	63
	07-Jul-01	14136	2359
	28-Jun-01	15530.7	364
	30-May-01	6867	51
	21-Apr-01	> 48,384.00	39725.6
	21-Apr-01	> 48,384.00	39725.6
	12-Apr-01	> 48,384.00	820
	26-Mar-01	> 48,384.00	10950
	20-Mar-01	4106	86
	14-Mar-01	3058	148
	05-Mar-01	> 48,384.00	39725.6
	11-Feb-01	> 48,384.00	2446
	10-Feb-01	> 48,384.00	2078
	27-Jan-01	> 24,192.00	2613
	24-Jan-01	> 24,192.00	1669
Stockton Deep Water Channel @ Channel Ma			
	23-May-02	1153	<10
Stockton Deep Water Channel @ Downtown			
	28-Aug-03	6,867	10

Location	Date	MPN total	MPN E coli
Turner Cut @ Tikki Lagun (2)			
	04-Apr-03	624	10
	28-Jan-03	1050	173
Turner Cut @ Turner Cut Resort			
	12-Nov-03	2247	20
	09-Oct-03	2,143	74
	06-Oct-03	2359	85
	30-Sep-03	1,233	103
	23-Sep-03	4,611	3,076
	15-Sep-03	1624	52
	04-Apr-03	959	31
	17-Mar-03	1553	122
	11-Feb-03	189	10
	28-Jan-03	959	20
	24-Sep-02	2755	41
	10-Jul-02	12996.5	20
	27-Jun-02	> 24,192.00	20
	04-Jun-02	5475	<10
	30-May-02	2014	<10
	21-May-02	3654	10
	16-May-02	1022	10
	07-May-02	1376	10
	21-Mar-01	1248	<20
	02-Oct-00	1187	20
	14-Sep-00	> 2,419.20	13.4
	14-Sep-00	1986.28	14.6
	22-Aug-00	> 2,419.20	9.7
Walker Slough @ Manthey Rd			
	31-May-02	19862.8	691
	02-May-02	8664	171
	11-Apr-02	1935	20
	22-Mar-02	4884	148
	20-Mar-02	6131	480
	04-Mar-02	1354	74
	14-Feb-02	3255	85

Location	Date	MPN total	MPN E coli
	21-Apr-01	48384	682
	11-Feb-01	> 48,384.00	3700
	10-Feb-01	> 48,384.00	480
	24-Jan-01	> 24,192.00	906
	11-Jan-01	> 24,192.00	4106
	08-Jan-01	> 24,192.00	2359
	06-Dec-00	379	31
	30-Oct-00	> 120,960.00	6055
	11-Oct-00	> 48,384.00	8212
Walker Slough @ Manthey Rd.			
	06-Jan-05	12,997	309
	27-Dec-04	3448	218
	27-Dec-04	5,475	197
	20-Dec-04	10,462	275
	13-Dec-04	6,488	0
	07-Dec-04	>24,192	4,880
	27-Oct-04	24,192	2,247
	30-Sep-04	>24192	717
	30-Sep-04	>24192	504
	22-Sep-04	>24,192	24,192
	15-Sep-04	24,192	160
	01-Sep-04	>24,192	187
	27-Jul-04	24192	243
	19-Jul-04	19863	288
	12-Jul-04	>24,192	282
	05-Jul-04	24,192	275
	05-Jul-04	>24,192	410
	01-Jul-04	24,192	158
	25-May-04	19,863	135
	21-May-04	17329	389
	17-May-04	12997	419
	12-May-04	12,033	134
	03-May-04	19,863	594
	03-May-04	19,863	591
	09-Feb-04	5475	281
	06-Feb-04	24,191.7	3,130

Location	Date	MPN total	MPN E coli
Walker Slough @ Hartley Rd.	05-Feb-04	24192	1281
	04-Feb-04	24,192	2,247
	02-Feb-04	4,884	231
	15-Apr-03	24191.7	909
	14-Apr-03	>24192	6131
	20-May-02	> 24,192.00	2012
	14-May-02	1119.85	35
	09-May-02	8164	131
	14-Mar-02	11198.5	677
	08-Mar-02	> 24,192.00	17328
	24-Feb-02	2481	98
	11-Feb-02	19862.8	620
	08-Feb-02	12996.5	134
	28-Jan-02	7701	228
	20-Jul-01	> 24,192.00	294
	07-Jul-01	17329	413
	28-Jun-01	> 24,192.00	262
	30-May-01	19862.8	187
	21-Apr-01	> 48,384.00	682
	12-Apr-01	14540	168
	26-Mar-01	> 48,384.00	5818
	20-Mar-01	2909	86
	14-Mar-01	2548	344
	05-Mar-01	> 48,384.00	31061.4
	10-Oct-00	> 24,192.00	19862.8
	04-Oct-00	> 24,192.00	341
	20-Sep-00	> 2,419.20	365.4
	28-Aug-00	> 2,419.20	325.5
	22-Aug-00	> 2,419.20	133.2
	18-Aug-00	> 2,419.20	920.8
	14-Aug-00	> 2,419.20	259.5
	07-Aug-00	> 2,419.20	387.3
	04-May-00	> 2,419.20	248
Walker Slough @ Turnpike Rd.			
	25-Apr-02	4610	<10
	18-Apr-02	> 24,192.00	14136

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

Total Maximum Daily Load Report For Pathogens In:

Five-Mile Slough, Lower Calaveras River, Mormon Slough, Mosher Slough, Smith Canal and Walker Slough

APPENDIX A
UNPUBLISHED WATER QUALITY DATA

Surface Water Ambient Monitoring Program –
Calaveras River at Highway 88
Site Description and Data

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MONITORNING SITE INFORMATION

SITE LOCATION Site ID# SJC 513

Site Name : Calaveras River @ Hwy 88

Site Description, Location and Access:

This site is located between the town of Waterloo and Eight Mile Road on Hwy 88. There is space to park on the south side of the bridge, and samples are taken under the bridge on the south side.

Latitude/Longitude: Lat – N 38º 14’ 10.4”
Long – W 121º 25’ 7.4”

County : San Joaquin

WATER SOURCE

The Calaveras River flows from New Hogan Reservoir through the Stockton East Water District via The Calaveras River, Mosher Slough, and Mormon Slough. The diversion points are upstream of this monitoring site. The irrigation season runs April through October, during which time Murphy Dam and Eightmile Dam are in place, filling the stream channel to capacity for the surrounding fields. From October through April, the only water in the channel is from rain and/or flood releases.

Site Code	Date	Temp (C)	Temp (F)	Field EC (umhos)	Lab EC (umhos)	pH	Dissolved Oxygen (mg/L)	Boron (mg/L)	Se (ug/L)	TSS (mg/L)	Turbidity (ntu)	TOC (mg/L)	Total Coli MPN	E. Coli MPN
Water Year 2002														
SJC513	1/7/2002	NA		NA		NA	NA							
SJC513	1/14/2002	NA		NA		NA	NA							
SJC513	1/22/2002	NA		NA		NA	NA							
SJC513	1/28/2002	NA		NA		NA	NA							
SJC513	2/11/2002	NA		NA		NA	NA							
SJC513	2/19/2002	10.2		257		7.7	11.6			1				
SJC513	2/25/2002	NA		NA		NA	NA							
SJC513	3/11/2002	11.8		79		7.8	10.7				NA		>2419.6	>2419.6
SJC513	3/25/2002	10.3		259		8.1	12.6			1	3.4		416	61
SJC513	4/8/2002	NA		NA		NA	NA				NA		NA	NA
SJC513	4/22/2002	15.4		204		7.7	9.0			1	1.7		189	19
SJC513	5/13/2002	18.3		205		7.4	6.3			2	2.3		1011	70
SJC513	5/20/2002	17.4		196		7.7	8.2			2	3.2	6.6	1011	260
SJC513	6/10/2002	20.3		187		8.1	9.7			<10	0.5	1.6	914	7
SJC513	6/24/2002	20.8		189		7.4	9.4			<10.0	17.4	3.1	914	39
SJC513	8/12/2002	22.3		187		7.9	7.8				2.0		>2419.6	308
SJC513	8/26/2002	19.2		178		7.8	8.1				5.0		>2419.6	210
SJC513	9/3/2002	21.4		84		8.8	NA			3	8.4		>2419.6	138
SJC513	9/17/2002	18.7		196		7.3	7.9			4	5.1		>2419.6	130
Water Year 2003														
SJC513	10/8/2002	17.4		194		7.6	8.5			3	5.1		>2419.6	99
SJC513	10/22/2002	NA		NA		NA	NA				NA		NA	NA
SJC513	11/5/2002	NA		NA		NA	NA				NA		NA	NA
SJC513	11/20/2002	NA		NA		NA	NA				NA		NA	NA
SJC513	12/12/2002	NA		NA		NA	NA						NA	NA
SJC513	12/23/2002	NA		NA		NA	NA						NA	NA

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

Total Maximum Daily Load Report For Pathogens In:

Five-Mile Slough, Lower Calaveras River, Mormon Slough, Mosher Slough, Smith Canal and Walker Slough

APPENDIX A
UNPUBLISHED WATER QUALITY DATA

Central Valley Water Board – San Joaquin River
TMDL Monitoring Data

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San Joaquin River TMDL Monitoring Data

			Fecal Coliform	E. coli
Site ID	**Location**	**Date**	**CFU/100ml**	**CFU/100ml**
JMH051012-11B	Smith @ Yosemite Lake	10/12/2005 7:20	14400	5200
JMH051012-12B	Smith @ Shimizu/Harding	10/12/2005 8:00	5700	300
JMH051012-13B	Smith @ Shimizu	10/12/2005 8:20	3500	600
JMH051012-14B	Calaveras @ Deltakeeper	10/12/2005 8:50	360	80
JMH051012-16B	Calaveras @ UOP	10/12/2005 9:45	4220	600
JMH051012-18B	Calaveras @ McAllen Rd	10/12/2005 10:40	1320	260
JMH051012-19B	SDC @ Wilson Way	10/12/2005 11:00	334	44
JMH051012-20B	Duplicate @ Deltakeeper	10/12/2005 8:51	310	32
JMH051012-21B	DI Blank	10/12/2005 8:21	0	0
JMH051012-16B	Calaveras @ UOP	10/12/2005 9:45	2180	500
JMH051013-01B	Mormon @ Hwy 4	10/13/2005 7:27	1800	500
JMH051013-02B	Mormon @ Morelli	10/13/2005 7:00	520	33
JMH051013-03B	Five Mile @ Plymouth	10/13/2005 7:55	380	13
JMH051013-04B	Five Mile @ Golf Course	10/13/2005 8:20	413	7
JMH051013-05B	Mosher @ Kelley	10/13/2005 8:40	2700	520
JMH051013-07B	Mosher @ Loch Lomand Park	10/13/2005 9:15	460	373
JMH051013-09B	Mosher @ Hwy 99	10/13/2005 9:57	214	92
JMH051013-10B	Mosher @ Hildreth	10/13/2005 10:13	427	133
JMH051013-05B	Mosher @ Kelley	10/13/2005 8:40	1680	280
JMH051025-11B	Smith @ Yosemite Lake	10/25/05 0715	1400	180
JMH051025-12B	Smith @ Shimizu/Harding	10/25/05 0745	547	27
JMH051025-13B	Smith @ Shimizu	10/25/05 0805	353	53
JMH051025-14B	Calaveras @ Deltakeeper	10/25/05 0825	280	80
JMH051025-16B	Calaveras @ UOP	10/25/05 0855	167	53
JMH051025-18B	Calaveras @ McAllen Rd	10/25/05 0955	3760	600
JMH051025-19B	SDC @ Wilson Way	10/25/05 1015	533	93
JMH051025-14B	Calaveras @ Deltakeeper	10/25/05 0825	287	67
PBS neg control			0	0
JMH051027-1B	Mormon @ Hwy 4	10/27/05 0740	1360	120
JMH051027-2B	Mormon @ Morelli	10/27/05 0725	2360	760
JMH051027-3B	Five Mile @ Plymouth	10/27/05 0810	620	60
JMH051027-4B	Five Mile @ Golf Course	10/27/05 0825	174	44
JMH051027-5B	Mosher @ Kelley	10/27/05 0845	1620	460
JMH051027-7B	Mosher @ Loch Lomand Park	10/27/05 0920	3900	1100
JMH051027-9B	Mosher @ Hwy 99	10/27/05 1005	800	40
JMH051027-10B	Mosher @ Hildreth	10/27/05 1030	2140	100
JMH051027-20B	Mosher @ Hwy 99 Duplicate	10/27/05 1008	540	40
JMH051027-21B	DI Blank	10/27/05 0601	0	0
JMH051027-5B	Mosher @ Kelley	10/27/05 0845	2420	260
PBS neg control			0	0
JMH051116-1B	Mormon @ Hwy 4	11/16/05 0715	1040	320
JMH051116-2B	Mormon @ Morelli	11/16/05 0725	460	40
JMH051116-3B	Five Mile @ Plymouth	11/16/05 0750	1980	40
JMH051116-4B	Five Mile @ Golf Course	11/16/05 0810	8100	100
JMH051116-5B	Mosher @ Kelley	11/16/05 0835	920	180
JMH051116-7B	Mosher @ Loch Lomand Park	11/16/05 0905	22000	100
JMH051116-20B	Mosher @ Loch Lomand Park	11/16/05 0905	18500	600
JMH051116-21B	DI Blank	11/16/2005 5:55	0	0

JMH051116-5B	Mosher @ Kelley	11/16/05 0835	200	140
PBS neg control			0	0
JMH051117-11B	Smith @ Yosemite Lake	11/17/05 0705	1960	200
JMH051117-12B	Smith @ Shimizu/Harding	11/17/05 0730	5480	580
JMH051117-13B	Smith @ Shimizu	11/17/05 0745	1020	300
JMH051117-14B	Calaveras @ Deltakeeper	11/17/05 0805	1140	240
JMH051117-16B	Calaveras @ UOP	11/17/05 0830	287	40
JMH051117-18B	Calaveras @ McAllen Rd	11/17/05 1005	3000	300
JMH051117-19B	SDC @ Wilson Way	11/17/05 0945	360	33
JMH051117-16B	Calaveras @ UOP	11/17/05 0830	247	53
PBS neg control			0	0
JMH051128-05B	Mosher @ Kelley	11/28/05 1215	7500	400
JMH051128-14B	Calaveras @ Deltakeeper	11/28/05 1030	560	73
JMH051128-16B	Calaveras @ UOP	11/28/05 1050	1660	60
PBS neg control			0	0
JMH051219-5B	Mosher @ Kelley	12/19/05 0800	21000	3000
JMH051219-14B	Calaveras @ Deltakeeper	12/19/05 1005	8600	1100
JMH051219-16B	Calaveras @ UOP	12/19/05 0840	5500	500
JMH051219-5B	Mosher @ Kelley	12/19/05 1150	16100	1600
JMH051219-9B	Mosher @ Hwy 99	12/19/05 1355	5800	1300
JMH051219-14B	Calaveras @ Deltakeeper	12/19/05 1220	6500	600
JMH051219-16B	Calaveras @ UOP	12/19/05 1325	5300	1200
JMH051219-20B	Duplicate @ Deltakeeper	12/19/05 0840	7000	460
JMH051219-21B	Blank	12/19/05 0620	0	0
JMH051219-9B	Mosher @ Hwy 99	12/19/05 1040	7400	1300
JMH051219-9B	Mosher @ Hwy 99	12/19/05 1355	4700	2300
JMH051220-5B	Mosher @ Kelley	12/20/05 730	8900	500
JMH051220-9B	Mosher @ Hwy 99	12/20/05 940	5700	1300
JMH051220-14B	Calaveras @ Deltakeeper	12/20/05 810	9700	700
JMH051220-16B	Calaveras @ UOP	12/20/05 910	493	107
JMH051220-16B	Calaveras @ UOP	12/20/05 910	407	140
JMH060227-5B	Mosher @ Kelley	2/27/2006 0950	5200	800
JMH060227-9B	UOP (used wrong bottle) is site 16	2/27/2006 1035	247	160
JMH060227-14B	Deltakeeper	2/27/2006 1135	7000	1000
JMH060227-20B	Duplicate @ Kelley	2/27/2006 0:00	6700	1800
JMH060227-21B	Blank	2/27/2006 745	0	0
JMH060227-20B	Duplicate	2/27/2006 0:00	4300	1600
PBS neg control			0	0
JMH051206-11B	Smith @ Yosemite Lake	12/06/05 0715	20000	720
JMH051206-12B	Smith @ Shimizu/Harding	12/06/05 0745	26300	200
JMH051206-13B	Smith @ Shimizu	12/06/05 0805	13700	1100
JMH051206-14B	Calaveras @ Deltakeeper	12/06/05 0835	2200	60
JMH051206-16B	Calaveras @ UOP	12/06/05 0905	440	40
JMH051206-19B	SDC @ Wilson Way	12/06/05 1000	100	7
JMH051206-16B	Calaveras @ UOP	12/06/05 0905	580	na
PBS neg control			0	0
JMH051208-2B	Mormon @ Morelli	12/08/05 1045	2700	500
JMH051208-1B	Mormon @ Hwy 4	12/08/05 0720	1113	33
JMH051208-3B	Five Mile @ Plymouth	12/08/05 0750	8300	500
JMH051208-4B	Five Mile @ Golf Course	12/08/05 0810	900	53
JMH051208-5B	Mosher @ Kelley	12/08/05 0830	1120	60
JMH051208-7B	Mosher @ Loch Lomand Park	12/08/05 0905	3000	500

JMH051208-9B	Mosher @ Hwy 99	12/08/05 0950	593	27
JMH051208-20B	duplicate	12/08/05 0720	420	47
JMH051208-21B	blank	12/08/05 0555	0	0
JMH051208-05B	Mosher @ Kelley	12/08/05 0830	240	47
PBS neg control			0	0
JMH060227-05B	Mosher @ Kelley	2/27/2006 0950	5200	800
JMH060227-9B	Deltakeeper (used wrong bottle) is site 14	2/27/2006 1035	247	160
JMH060227-14B	UOP (used wrong bottle) is site 16	2/27/2006 1135	7000	1000
JMH060227-20B	Duplicate @ Kelley	2/27/2006 0:00	6700	1800
JMH060227-21B	Blank	2/27/2006 745	0	0
JMH060227-20B	Duplicate	2/27/2006 0:00	4300	1600
PBS neg control		2/27/2006	0	0