

# GRASSLAND BYPASS PROJECT

## MONTHLY DATA REPORT

**August 2005**

January 12, 2006

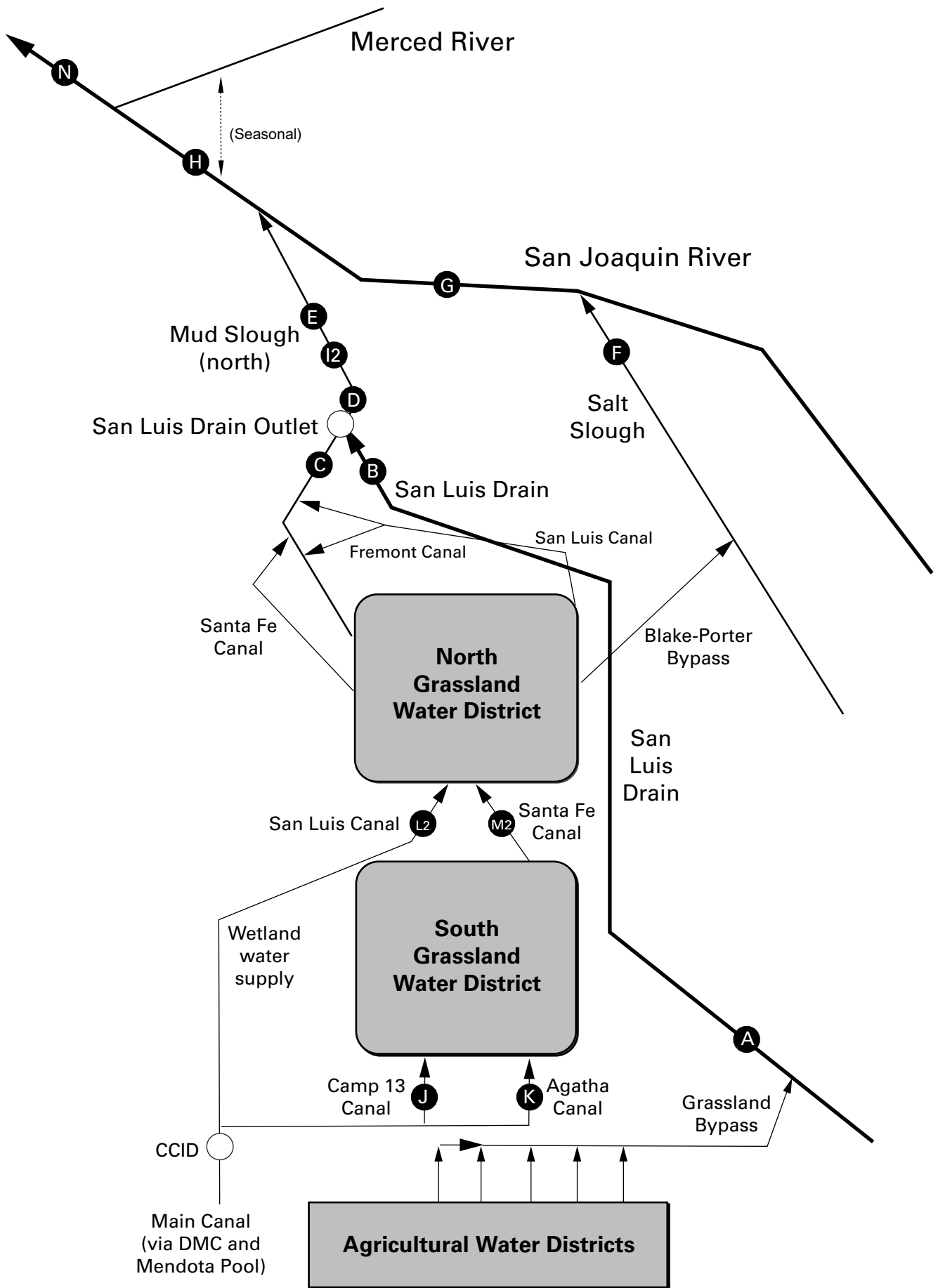
### Preliminary Results

A cooperative effort of:

U.S. Bureau of Reclamation  
Central Valley Regional Water Quality Control Board  
U.S. Fish and Wildlife Service  
California Department of Fish and Game  
San Luis & Delta-Mendota Water Authority  
U.S. Environmental Protection Agency  
U.S. Geological Survey

compiled by San Francisco Estuary Institute





**GRASSLAND BYPASS PROJECT**  
**MONTHLY DATA REPORT**

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**Table 1. Continuous water monitoring at Station A (inflow to San Luis Drain), August 2005.**

See Table 27 for explanation of footnotes and agency abbreviations.

| <b>PARAMETER</b>   | <b>Flow</b>   | <b>Specific Conductance</b> |
|--------------------|---------------|-----------------------------|
| <b>DATA SOURCE</b> | <b>SLDMWA</b> | <b>SLDMWA</b>               |
| <b>UNITS</b>       | <b>cfs</b>    | <b>µS/cm</b>                |
| Aug-01-2005        | 49            | 4,020                       |
| Aug-02-2005        | 47            | 4,050                       |
| Aug-03-2005        | 45            | 4,110                       |
| Aug-04-2005        | 40            | 4,290                       |
| Aug-05-2005        | 37            | 4,380                       |
| Aug-06-2005        | 36            | 4,410                       |
| Aug-07-2005        | 36            | 4,320                       |
| Aug-08-2005        | 39            | 4,340                       |
| Aug-09-2005        | 40            | 4,320                       |
| Aug-10-2005        | 43            | 4,160                       |
| Aug-11-2005        | 45            | 3,850                       |
| Aug-12-2005        | 43            | 3,970                       |
| Aug-13-2005        | 43            | 3,800                       |
| Aug-14-2005        | 52            | 3,730                       |
| Aug-15-2005        | 54            | 3,800                       |
| Aug-16-2005        | 54            | 3,860                       |
| Aug-17-2005        | 54            | 3,540                       |
| Aug-18-2005        | 54            | 3,500                       |
| Aug-19-2005        | 50            | 3,670                       |
| Aug-20-2005        | 50            | 3,670                       |
| Aug-21-2005        | 51            | 3,950                       |
| Aug-22-2005        | 60            | 3,440                       |
| Aug-23-2005        | 54            | 3,760                       |
| Aug-24-2005        | 48            | 3,840                       |
| Aug-25-2005        | 44            | 4,080                       |
| Aug-26-2005        | 48            | 4,450                       |
| Aug-27-2005        | 52            | 4,450                       |
| Aug-28-2005        | 53            | 4,350                       |
| Aug-29-2005        | 53            | 4,300                       |
| Aug-30-2005        | 48            | 4,210                       |
| Aug-31-2005        | 44            | 4,050                       |
| Mean               | 47            | 4,020                       |

Table 2a. Continuous water monitoring at Station B (discharge from San Luis Drain), August 2005.

See Table 27 for explanation of footnotes and agency abbreviations.

| PARAMETER              | Flow         | Temperature | Boron   | Specific Conductance | Selenium (total) | Selenium (total) Load |
|------------------------|--------------|-------------|---------|----------------------|------------------|-----------------------|
| DATA SOURCE            | USGS         | USGS        | CVRWQCB | CVRWQCB              | CVRWQCB          | Computed              |
| UNITS                  | cfs          | °C          | mg/L    | µS/cm                | µg/L             | lbs                   |
| Aug-01-2005            | 53           | 28.6        | 8.3     | 4,160                | 31.8             | 9.1                   |
| Aug-02-2005            | 51           | 28.1        | 7.8     | 4,010                | 30.2             | 8.3                   |
| Aug-03-2005            | 49           | 27.9        | 7.6     | 3,910                | 29.2             | 7.7                   |
| Aug-04-2005            | 47           | 28.1        | 8.2     | 4,100                | 34.8             | 8.8                   |
| Aug-05-2005            | 42           | 28.2        | 8.4     | 4,140                | 34.2             | 7.7                   |
| Aug-06-2005            | 39           | 28.2        | 8.5     | 4,120                | 33.0             | 6.9                   |
| Aug-07-2005            | 38           | 28.5        | 8.6     | 4,400                | 40.2             | 8.2                   |
| Aug-08-2005            | 38           | 28.6        | 8.9     | 4,520                | 40.1             | 8.2                   |
| Aug-09-2005            | 41           | 28.5        | 9.2     | 4,670                | 43.0             | 9.5                   |
| Aug-10-2005            | 42           | 28.2        | 8.6     | 4,540                | 42.4             | 9.6                   |
| Aug-11-2005            | 46           | 27.8        | 8.8     | 4,550                | 39.9             | 9.9                   |
| Aug-12-2005            | 47           | 27.7        | NA      | 4,470                | 42.1             | 10.7                  |
| Aug-13-2005            | 45           | 27.1        | NA      | 4,410                | 40.6             | 9.9                   |
| Aug-14-2005            | 46           | 25.9        | NA      | 4,180                | 38.0             | 9.4                   |
| Aug-15-2005            | 55           | 24.4        | NA      | 4,260                | 37.8             | 11.2                  |
| Aug-16-2005            | 58           | 23.6        | NA      | 4,150                | 36.8             | 11.5                  |
| Aug-17-2005            | 57           | 25.0        | NA      | 4,050                | 38.5             | 11.8                  |
| Aug-18-2005            | 57           | 25.5        | NA      | 3,840                | 35.6             | 10.9                  |
| Aug-19-2005            | 57           | 25.3        | NA      | 3,780                | 34.6             | 10.6                  |
| Aug-20-2005            | 54           | 24.9        | NA      | 3,600                | 29.2             | 8.5                   |
| Aug-21-2005            | 52           | 25.0        | NA      | 3,610                | 31.6             | 8.9                   |
| Aug-22-2005            | 55           | 25.3        | NA      | 3,790                | 34.6             | 10.3                  |
| Aug-23-2005            | 61           | 26.0        | NA      | 3,810                | 35.8             | 11.8                  |
| Aug-24-2005            | 55           | 25.9        | NA      | 3,860                | 39.8             | 11.8                  |
| Aug-25-2005            | 50           | 25.9        | NA      | 3,480                | 34.6             | 9.3                   |
| Aug-26-2005            | 47           | 25.7        | 6.4     | 3,630                | 37.6             | 9.5                   |
| Aug-27-2005            | 51           | 26.0        | 7.6     | 4,110                | 41.0             | 11.3                  |
| Aug-28-2005            | 54           | 26.5        | 7.4     | 4,050                | 38.8             | 11.3                  |
| Aug-29-2005            | 55           | 26.7        | 8.5     | 4,560                | 42.0             | 12.5                  |
| Aug-30-2005            | 56           | 24.7        | 8.3     | 4,640                | 49.6             | 15.0                  |
| Aug-31-2005            | 51           | 24.5        | 8.3     | 4,560                | 50.8             | 14.0                  |
| Mean                   | 50           | 26.5        | 8.2     | 4,130                | 37.7             | 10.1                  |
| <b>Total Acre-feet</b> | <b>3,070</b> |             |         |                      |                  |                       |
| <b>Total (lbs)</b>     |              |             |         |                      |                  | <b>314</b>            |

|  |            |
|--|------------|
| <b>Load Limitation for August 2005 (lbs)</b> | <b>366</b> |
|--|------------|

Table 2b. Continuous water monitoring at San Luis Drain Outlet, August 2005.

Note: This is unofficial data reported for comparison with Station B.

See Table 27 for explanation of footnotes and agency abbreviations.

| PARAMETER       | San Luis Drain Outlet Flow | Selenium (total) * | Selenium (total) Load |
|-----------------|----------------------------|--------------------|-----------------------|
| DATA SOURCE     | USGS                       | CVRWQCB            | Computed              |
| UNITS           | cfs                        | µg/L               | lbs                   |
| Aug-01-2005     | 51                         | 31.8               | 8.7                   |
| Aug-02-2005     | 50                         | 30.2               | 8.1                   |
| Aug-03-2005     | 48                         | 29.2               | 7.6                   |
| Aug-04-2005     | 46                         | 34.8               | 8.6                   |
| Aug-05-2005     | 41                         | 34.2               | 7.6                   |
| Aug-06-2005     | 37                         | 33.0               | 6.6                   |
| Aug-07-2005     | 37                         | 40.2               | 8.0                   |
| Aug-08-2005     | 37                         | 40.1               | 8.0                   |
| Aug-09-2005     | 39                         | 43.0               | 9.0                   |
| Aug-10-2005     | 40                         | 42.4               | 9.1                   |
| Aug-11-2005     | 44                         | 39.9               | 9.5                   |
| Aug-12-2005     | 45                         | 42.1               | 10.2                  |
| Aug-13-2005     | 43                         | 40.6               | 9.4                   |
| Aug-14-2005     | 45                         | 38.0               | 9.2                   |
| Aug-15-2005     | 53                         | 37.8               | 10.8                  |
| Aug-16-2005     | 56                         | 36.8               | 11.1                  |
| Aug-17-2005     | 56                         | 38.5               | 11.6                  |
| Aug-18-2005     | 55                         | 35.6               | 10.6                  |
| Aug-19-2005     | 55                         | 34.6               | 10.3                  |
| Aug-20-2005     | 52                         | 29.2               | 8.2                   |
| Aug-21-2005     | 51                         | 31.6               | 8.7                   |
| Aug-22-2005     | 54                         | 34.6               | 10.1                  |
| Aug-23-2005     | 61                         | 35.8               | 11.8                  |
| Aug-24-2005     | 55                         | 39.8               | 11.8                  |
| Aug-25-2005     | 50                         | 34.6               | 9.3                   |
| Aug-26-2005     | 47                         | 37.6               | 9.5                   |
| Aug-27-2005     | 50                         | 41.0               | 11.1                  |
| Aug-28-2005     | 54                         | 38.8               | 11.3                  |
| Aug-29-2005     | 55                         | 42.0               | 12.5                  |
| Aug-30-2005     | 54                         | 49.6               | 14.4                  |
| Aug-31-2005     | 52                         | 50.8               | 14.2                  |
| Mean            | 49                         | 37.7               | 9.9                   |
| Total Acre-feet | 3,000                      |                    |                       |
| Total (lbs)     |                            |                    | 307                   |

The US Geological Survey determines flow at Station B through continuous measurements of stage that is rated for a known cross-section. These flow data, listed in Table 2a, are verified with frequent current meter measurements.

Monitoring and Reporting Program No. 5-101-234 states:

"Samples representative of the discharge shall be collected from the San Luis Drain at the footbridge between Gun Club Road and the terminus (Site B)."

Accurate flow measurements are necessary to determine compliance with selenium load limits specified in Waste Discharge Requirement Order No. 5-101-234.

The accumulation of sediments, as documented in the 2001 Annual Report, have caused irregularities in flow measurements at Station B, resulting in "shifts" in the relationship between stage and discharge.

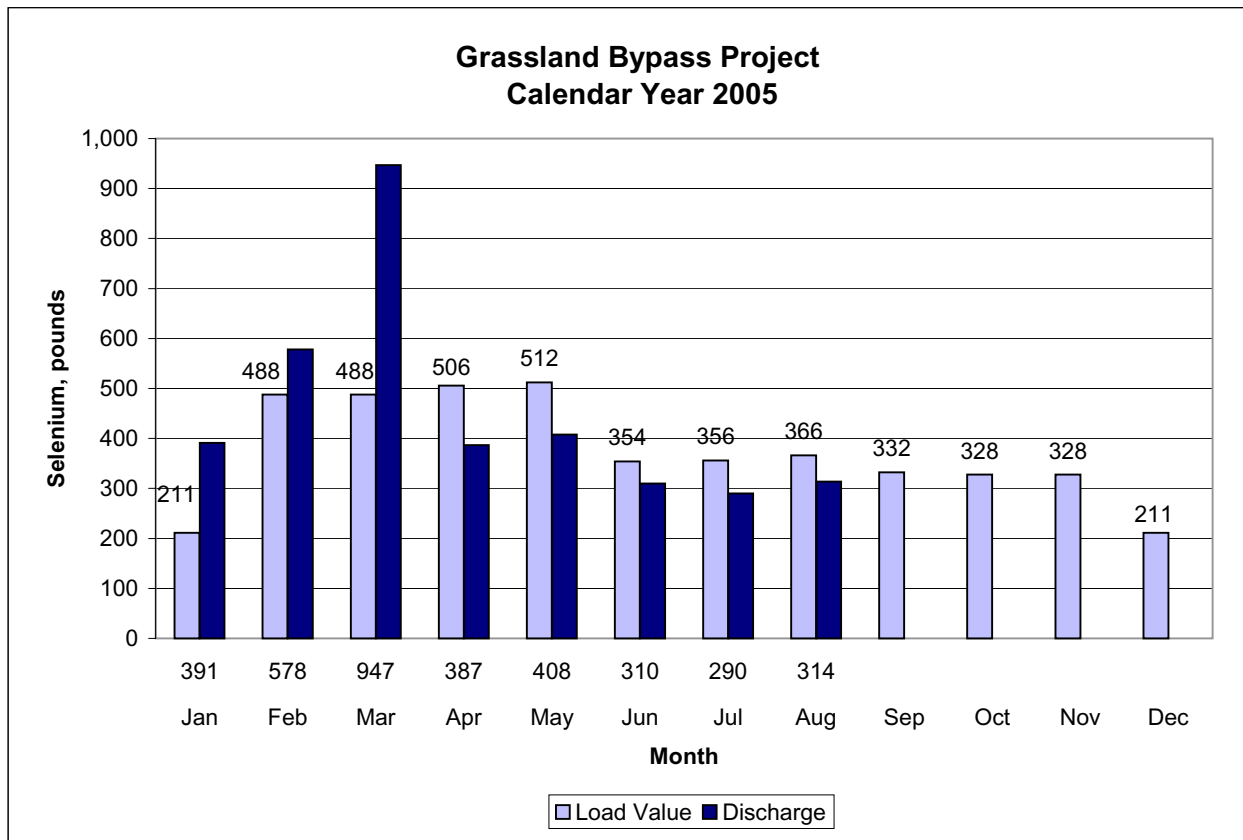
To improve the accuracy of flow measurements, Reclamation and the San Luis & Delta-Mendota Water Authority, with technical assistance from the USGS, are measuring flow at the San Luis Drain Outlet. The Outlet is located two miles from Station B. Discharge will be measured as stage over a sharp-crested weir, identical to Station A. This is a simpler and more accurate method that will not be altered by sediment accumulation.

This change is subject to approval by the California Regional Water Quality Board and modification of the Waste Discharge Requirement Order and Monitoring and Reporting Program. It is anticipated that flow will be measured solely at the Outlet works for determination of GBP flow discharge.

Unofficial flow data for the Outlet works are presented in Table 2b for comparison and are not used to determine compliance with the Waste Discharge Requirement Order.

\*Selenium (total) concentrations from Site B (San Luis Drain)

Figure 2c. Monthly selenium discharges from the terminus of the San Luis Drain into Mud Slough compared to load values.



**Table 3. Continuous water monitoring at Station D  
(Mud Slough North downstream of drainage discharges), August 2005.**

See Table 27 for explanation of footnotes and agency abbreviations.

| <b>PARAMETER</b>   | <b>Flow</b> | <b>Temperature</b> | <b>Specific Conductance</b> |
|--------------------|-------------|--------------------|-----------------------------|
| <b>DATA SOURCE</b> | <b>usgs</b> | <b>usgs</b>        | <b>usgs</b>                 |
| <b>UNITS</b>       | <b>cfs</b>  | <b>°C</b>          | <b>µS/cm</b>                |
| Aug-01-2005        | 74          | 28.5               | 3,100                       |
| Aug-02-2005        | 75          | 27.9               | 2,950                       |
| Aug-03-2005        | 68          | 27.9               | 3,090                       |
| Aug-04-2005        | 66          | 28.1               | 3,140                       |
| Aug-05-2005        | 61          | 28.2               | 3,120                       |
| Aug-06-2005        | 51          | 28.3               | 3,380                       |
| Aug-07-2005        | 56          | 28.7               | 3,150                       |
| Aug-08-2005        | 64          | 28.7               | 3,040                       |
| Aug-09-2005        | 65          | 28.3               | 3,240                       |
| Aug-10-2005        | 68          | 28.0               | 3,220                       |
| Aug-11-2005        | 69          | 27.5               | 3,280                       |
| Aug-12-2005        | 78          | 27.7               | 3,020                       |
| Aug-13-2005        | 70          | 27.0               | 3,050                       |
| Aug-14-2005        | 58          | 26.2               | 3,340                       |
| Aug-15-2005        | 68          | 24.7               | 3,270                       |
| Aug-16-2005        | 84          | 24.3               | 2,860                       |
| Aug-17-2005        | 75          | 25.4               | 3,060                       |
| Aug-18-2005        | 67          | 25.7               | 3,100                       |
| Aug-19-2005        | 78          | 25.2               | 2,720                       |
| Aug-20-2005        | 92          | 25.0               | 2,270                       |
| Aug-21-2005        | 81          | 25.1               | 2,420                       |
| Aug-22-2005        | 71          | 25.3               | 2,760                       |
| Aug-23-2005        | 73          | 26.1               | 3,070                       |
| Aug-24-2005        | 60          | 26.1               | 3,540                       |
| Aug-25-2005        | 59          | 25.9               | 2,900                       |
| Aug-26-2005        | 57          | 25.7               | 2,800                       |
| Aug-27-2005        | 63          | 26.0               | 3,070                       |
| Aug-28-2005        | 66          | 26.6               | 3,220                       |
| Aug-29-2005        | 68          | 26.4               | 3,580                       |
| Aug-30-2005        | 72          | 24.1               | 3,470                       |
| Aug-31-2005        | 76          | 24.3               | 3,190                       |
| Mean               | 69          | 26.5               | 3,080                       |



Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), August 2005.

See Table 27 for explanation of footnotes and agency abbreviations.

| PARAMETER   | Flow | Temperature | Specific Conductance |
|-------------|------|-------------|----------------------|
| DATA SOURCE | usgs | usgs        | usgs                 |
| UNITS       | cfs  | °C          | µS/cm                |
| Aug-01-2005 | 203  | 27.8        | 800                  |
| Aug-02-2005 | 197  | 27.2        | 787                  |
| Aug-03-2005 | 172  | 27.1        | 827                  |
| Aug-04-2005 | 159  | 27.4        | 887                  |
| Aug-05-2005 | 162  | 27.6        | 897                  |
| Aug-06-2005 | 172  | 27.8        | 883                  |
| Aug-07-2005 | 187  | 28.1        | 863                  |
| Aug-08-2005 | 196  | 28.0        | 837                  |
| Aug-09-2005 | 204  | 27.6        | 848                  |
| Aug-10-2005 | 198  | 27.3        | 851                  |
| Aug-11-2005 | 190  | 26.8        | 868                  |
| Aug-12-2005 | 181  | 26.9        | 885                  |
| Aug-13-2005 | 198  | 26.0        | 854                  |
| Aug-14-2005 | 223  | 24.6        | 793                  |
| Aug-15-2005 | 241  | 23.1        | 783                  |
| Aug-16-2005 | 245  | 23.3        | 802                  |
| Aug-17-2005 | 218  | 25.2        | 874                  |
| Aug-18-2005 | 172  | 25.6        | 963                  |
| Aug-19-2005 | 146  | 24.7        | 981                  |
| Aug-20-2005 | 143  | 24.4        | 1,010                |
| Aug-21-2005 | 145  | 24.7        | 1,030                |
| Aug-22-2005 | 167  | 24.7        | 1,040                |
| Aug-23-2005 | 191  | 25.4        | 964                  |
| Aug-24-2005 | 169  | 25.3        | 942                  |
| Aug-25-2005 | 146  | 25.3        | 977                  |
| Aug-26-2005 | 142  | 25.3        | 980                  |
| Aug-27-2005 | 136  | 25.8        | 970                  |
| Aug-28-2005 | 139  | 26.5        | 983                  |
| Aug-29-2005 | 166  | 26.1        | 972                  |
| Aug-30-2005 | 180  | 23.9        | 906                  |
| Aug-31-2005 | 168  | 23.9        | 918                  |
| Mean        | 179  | 25.9        | 900                  |

Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), August 2005.

See Table 27 for explanation of footnotes and agency abbreviations.

| PARAMETER   | Flow  | Temperature | Specific Conductance | Selenium (total) |
|-------------|-------|-------------|----------------------|------------------|
| DATA SOURCE | USGS  | USGS        | CVRWQCB              | CVRWQCB          |
| UNITS       | cfs   | °C          | µS/cm                | µg/L             |
| Aug-01-2005 | 1,120 | 26.1        | NA                   | NA               |
| Aug-02-2005 | 1,100 | 25.7        | NA                   | NA               |
| Aug-03-2005 | 1,080 | 25.4        | NA                   | NA               |
| Aug-04-2005 | 1,070 | 25.5        | NA                   | NA               |
| Aug-05-2005 | 1,140 | 25.7        | 800                  | 1.6              |
| Aug-06-2005 | 1,180 | 25.6        | 716                  | 1.3              |
| Aug-07-2005 | 1,190 | 25.6        | 692                  | 1.6              |
| Aug-08-2005 | 1,200 | 25.6        | 689                  | 1.3              |
| Aug-09-2005 | 1,210 | 25.3        | 681                  | 1.5              |
| Aug-10-2005 | 1,220 | 25.2        | 667                  | 1.4              |
| Aug-11-2005 | 1,190 | 24.7        | 675                  | 1.6              |
| Aug-12-2005 | 1,190 | 24.7        | 679                  | 1.6              |
| Aug-13-2005 | 1,180 | 24.4        | 733                  | 1.7              |
| Aug-14-2005 | 1,150 | 23.9        | 684                  | 1.8              |
| Aug-15-2005 | 1,190 | 23.2        | 657                  | 1.6              |
| Aug-16-2005 | 1,240 | 22.7        | 635                  | 1.7              |
| Aug-17-2005 | 1,330 | 23.6        | 616                  | 1.8              |
| Aug-18-2005 | 1,340 | 23.3        | 604                  | 1.6              |
| Aug-19-2005 | 1,340 | 22.8        | 629                  | 1.7              |
| Aug-20-2005 | 1,370 | 22.5        | 617                  | 1.6              |
| Aug-21-2005 | 1,430 | 22.5        | 571                  | 1.5              |
| Aug-22-2005 | 1,420 | 22.4        | 539                  | 1.2              |
| Aug-23-2005 | 1,400 | 23.0        | 523                  | 1.4              |
| Aug-24-2005 | 1,420 | 23.1        | 563                  | 1.6              |
| Aug-25-2005 | 1,440 | 22.7        | 546                  | 1.7              |
| Aug-26-2005 | 1,470 | 22.5        | 513                  | 1.4              |
| Aug-27-2005 | 1,450 | 22.4        | 506                  | 1.2              |
| Aug-28-2005 | 1,250 | 23.3        | 648                  | 1.5              |
| Aug-29-2005 | 1,070 | 24.1        | 813                  | 2.0              |
| Aug-30-2005 | 989   | 22.9        | 865                  | 2.1              |
| Aug-31-2005 | 990   | 22.9        | 898                  | 2.5              |
| Mean        | 1,240 | 24.0        | 660                  | 1.6              |

Table 6a. Weekly water quality monitoring at Station A (inflow to San Luis Drain), taken from grab samples.

See Table 27 for explanation of footnotes and agency abbreviations.

| PARAMETER   | Flow   | . | . | Specific Conductance | Total Suspended Solids | . | . | . |
|-------------|--------|---|---|----------------------|------------------------|---|---|---|
| DATA SOURCE | SLDMWA | . | . | CVRWQCB              | CVRWQCB                | . | . | . |
| UNITS       | cfs    | . | . | µS/cm                | mg/L                   | . | . | . |
| Jun-01-2005 | 48     | . | . | 4,540                | 180                    | . | . | . |
| Jun-08-2005 | 42     | . | . | 4,200                | 100                    | . | . | . |
| Jun-15-2005 | 36     | . | . | 4,580                | 190                    | . | . | . |
| Jun-22-2005 | 47     | . | . | 4,280                | 110                    | . | . | . |
| Jun-29-2005 | 49     | . | . | 4,650                | 120                    | . | . | . |
| Jul-06-2005 | 48     | . | . | 4,880                | 95                     | . | . | . |
| Jul-13-2005 | 48     | . | . | 4,080                | 89                     | . | . | . |
| Jul-20-2005 | 41     | . | . | 4,220                | P                      | . | . | . |
| Jul-27-2005 | 36     | . | . | 4,020                | 100                    | . | . | . |
| Aug-03-2005 | 45     | . | . | 4,160                | P                      | . | . | . |
| Aug-10-2005 | 43     | . | . | 3,840                | 160                    | . | . | . |
| Aug-17-2005 | 54     | . | . | 3,290                | 160                    | . | . | . |
| Aug-24-2005 | 48     | . | . | 3,970                | 140                    | . | . | . |
| Aug-31-2005 | 44     | . | . | 4,150                | P                      | . | . | . |

Table 6b. Weekly water quality monitoring at Station A (inflow to San Luis Drain), taken from composite samples.

See Table 27 for explanation of footnotes and agency abbreviations.

| PARAMETER   | Flow   | . | . | Specific Conductance | . | Selenium (total) | . | Boron   |
|-------------|--------|---|---|----------------------|---|------------------|---|---------|
| DATA SOURCE | SLDMWA | . | . | CVRWQCB              | . | CVRWQCB          | . | CVRWQCB |
| UNITS       | cfs    | . | . | µS/cm                | . | µg/L             | . | mg/L    |
| Jun-07-2005 | 42     | . | . | 4,220                | . | 35.2             | . | 7.7     |
| Jun-14-2005 | 47     | . | . | 4,410                | . | 41.2             | . | 8.2     |
| Jun-21-2005 | 46     | . | . | 4,640                | . | 40.6             | . | 9.8     |
| Jun-28-2005 | 49     | . | . | 4,160                | . | 39.6             | . | 9.0     |
| Jul-05-2005 | 47     | . | . | 4,780                | . | 47.8             | . | 9.1     |
| Jul-12-2005 | 46     | . | . | 4,470                | . | 39.7             | . | 8.7     |
| Jul-19-2005 | 48     | . | . | 4,200                | . | 35.0             | . | P       |
| Jul-26-2005 | 38     | . | . | 4,030                | . | 32.6             | . | 8.1     |
| Aug-02-2005 | 47     | . | . | 4,090                | . | 31.2             | . | 7.8     |
| Aug-09-2005 | 40     | . | . | 4,440                | . | 43.4             | . | 8.8     |
| Aug-16-2005 | 54     | . | . | 3,990                | . | 37.2             | . | 6.1     |
| Aug-23-2005 | 54     | . | . | 3,810                | . | 35.7             | . | P       |

Table 7. Weekly water quality monitoring at Station B (discharge from San Luis Drain), taken from grab samples.

See Table 27 for explanation of footnotes and agency abbreviations.

| PARAMETER   | Flow | Temperature | pH      | Specific Conductance | Total Suspended Solids | Selenium (total) | Boron   |
|-------------|------|-------------|---------|----------------------|------------------------|------------------|---------|
| DATA SOURCE | USGS | CVRWQCB     | CVRWQCB | CVRWQCB              | CVRWQCB                | CVRWQCB          | CVRWQCB |
| UNITS       | cfs  | °C          | .       | µS/cm                | mg/L                   | µg/L             | mg/L    |
| Jun-02-2005 | 52   | 21.4        | 8.4     | 4,670                | 76                     | 49.5             | 9.5     |
| Jun-09-2005 | 46   | 20.5        | 7.9     | 3,970                | 66                     | 33.9             | 7.2     |
| Jun-16-2005 | 35   | 24.1        | 8.1     | 4,310                | 44                     | 40.0             | 8.3     |
| Jun-23-2005 | 47   | 23.9        | NA      | 4,430                | 64                     | 43.2             | 9.3     |
| Jun-30-2005 | 50   | 25.7        | 8.5     | 3,930                | 58                     | 39.8             | 7.0     |
| Jul-07-2005 | 49   | 25.5        | 8.5     | 4,980                | 61                     | 47.2             | 9.9     |
| Jul-13-2005 | 48   | 28.7        | 8.7     | 4,530                | 49                     | 43.6             | 8.7     |
| Jul-21-2005 | 44   | 27.7        | 8.1     | 4,210                | P                      | 17.8             | 8.2     |
| Jul-28-2005 | 38   | 27.3        | 8.5     | 4,130                | 39                     | 31.6             | 7.8     |
| Aug-04-2005 | 47   | 27.0        | 8.2     | 3,940                | 42                     | 30.0             | 7.7     |
| Aug-11-2005 | 46   | 26.7        | 8.4     | 4,670                | 46                     | 41.8             | 8.4     |
| Aug-18-2005 | 57   | 24.4        | 8.0     | 3,790                | P                      | 35.4             | 6.5     |
| Aug-25-2005 | 50   | 25.0        | 8.4     | 3,490                | 33                     | 36.2             | 6.1     |

Table 8. Weekly water quality monitoring at Station C (Mud Slough North upstream of drainage discharges).

See Table 27 for explanation of footnotes and agency abbreviations.

| PARAMETER   | Flow          | Temperature | pH      | Specific Conductance | . | Selenium (total) | Boron   |
|-------------|---------------|-------------|---------|----------------------|---|------------------|---------|
| DATA SOURCE | calculated ** | CVRWQCB     | CVRWQCB | CVRWQCB              | . | CVRWQCB          | CVRWQCB |
| UNITS       | cfs           | °C          | .       | µS/cm                | . | µg/L             | mg/L    |
| Jun-02-2005 | 38            | 21.0        | 8.1     | 1,340                | . | 0.6              | 1.6     |
| Jun-09-2005 | 35            | 20.2        | 8.0     | 1,080                | . | 0.5              | 1.0     |
| Jun-16-2005 | 34            | 23.0        | 8.0     | 1,230                | . | 0.8              | 1.3     |
| Jun-23-2005 | 67            | 23.5        | NA      | 949                  | . | 1.0              | 1.2     |
| Jun-30-2005 | 41            | 26.5        | 8.2     | 1,110                | . | 1.0              | 1.0     |
| Jul-07-2005 | 38            | 25.9        | 8.0     | 1,070                | . | 1.0              | 0.9     |
| Jul-13-2005 | 43            | 28.1        | 7.3     | 970                  | . | 1.1              | 1.0     |
| Jul-21-2005 | 24            | 27.0        | 8.2     | 1,140                | . | 1.2              | 1.3     |
| Jul-28-2005 | 11            | 29.3        | 8.7     | 1,270                | . | 0.9              | 1.4     |
| Aug-04-2005 | 19            | 25.7        | 8.5     | 1,130                | . | 1.4              | 1.3     |
| Aug-11-2005 | 23            | 27.3        | 8.4     | 1,110                | . | 0.8              | 1.2     |
| Aug-18-2005 | 11            | 23.2        | 8.3     | 1,170                | . | 0.6              | 1.1     |
| Aug-25-2005 | 10            | 22.2        | 8.0     | 1,110                | . | 0.5              | 1.0     |

\*\* Calculated flow value. Flow at Station C = flow at Station D - flow at Station B.

**Table 9. Weekly water quality monitoring at Station D (Mud Slough North downstream of drainage discharges).**

See Table 27 for explanation of footnotes and agency abbreviations.

| PARAMETER   | Flow | Temperature | pH      | Specific Conductance | Selenium (total) | Boron   |
|-------------|------|-------------|---------|----------------------|------------------|---------|
| DATA SOURCE | USGS | CVRWQCB     | CVRWQCB | CVRWQCB              | CVRWQCB          | CVRWQCB |
| UNITS       | cfs  | °C          | .       | µS/cm                | µg/L             | mg/L    |
| Jun-02-2005 | 90   | 21.8        | 8.3     | 2,420                | 19.4             | 4.8     |
| Jun-09-2005 | 81   | 20.7        | 8.1     | 2,790                | 15.8             | 4.5     |
| Jun-16-2005 | 69   | 23.4        | 8.1     | 3,000                | 20.4             | 5.0     |
| Jun-23-2005 | 114  | 23.5        | NA      | 2,700                | 19.8             | 4.9     |
| Jun-30-2005 | 91   | 25.9        | 8.4     | 2,740                | 23.0             | 4.5     |
| Jul-07-2005 | 87   | 25.2        | 7.9     | 3,410                | 28.6             | 6.3     |
| Jul-13-2005 | 91   | 27.9        | 7.2     | 2,740                | 19.0             | 5.0     |
| Jul-21-2005 | 68   | 27.2        | 8.3     | 2,930                | 9.7              | 5.3     |
| Jul-28-2005 | 49   | 27.6        | 8.6     | 3,370                | 22.7             | 6.1     |
| Aug-04-2005 | 66   | 26.1        | 8.5     | 3,190                | 21.8             | 5.8     |
| Aug-11-2005 | 69   | 26.6        | 8.5     | 3,240                | 23.6             | 5.5     |
| Aug-18-2005 | 67   | 24.1        | 8.2     | 3,470                | 28.9             | 5.7     |
| Aug-25-2005 | 59   | 24.2        | 7.9     | 3,000                | 27.0             | 5.1     |

**Table 10. Weekly water quality monitoring at Station I2 (Mud Slough backwater downstream of Station D).**

See Table 27 for explanation of footnotes and agency abbreviations.

| PARAMETER   |   | pH   | Specific Conductance | Turbidity | Selenium | Boron |
|-------------|---|------|----------------------|-----------|----------|-------|
| DATA SOURCE |   | USBR | USBR                 | USBR      | USBR     | USBR  |
| UNITS       |   | .    | µS/cm                | NTU       | µg/L     | mg/L  |
| Jun-02-2005 | . | 8.8  | 3,120                | 17        | 24.0     | 5.2   |
| Jun-07-2005 | . | 9.1  | 2,540                | 22        | 14.2     | 4.3   |
| Jun-15-2005 | . | 8.6  | 3,650                | 47        | 21.8     | 6.2   |
| Jun-21-2005 | . | 8.8  | 3,220                | 59        | 16.8     | 5.0   |
| Jun-29-2005 | . | 8.6  | 3,240                | 33        | 22.0     | 4.9   |
| Jul-06-2005 | . | 8.6  | 3,300                | 24        | 22.6     | 5.4   |
| Jul-12-2005 | . | 8.6  | 2,920                | 29        | 19.3     | 5.2   |
| Jul-19-2005 | . | 8.7  | 3,670                | 19        | 22.6     | 6.6   |
| Jul-26-2005 | . | 8.6  | 3,260                | 18        | 17.6     | 5.5   |
| Aug-04-2005 | . | 8.4  | 3,380                | 20        | 20.2     | 5.9   |
| Aug-11-2005 | . | 8.6  | 3,320                | 22        | 23.8     | 5.9   |
| Aug-15-2005 | . | 8.3  | 3,520                | 42        | 31.9     | 6.4   |
| Aug-23-2005 | . | 8.3  | 3,180                | 21        | 27.6     | 5.5   |
| Aug-31-2005 | . | 8.1  | 3,270                | 25        | 30.4     | 5.4   |

Table 11. Weekly water quality monitoring at Station F (Salt Slough at Lander Avenue).

See Table 27 for explanation of footnotes and agency abbreviations.

| PARAMETER   | Flow | Temperature | pH      | Specific Conductance | Selenium (total) | Boron   |
|-------------|------|-------------|---------|----------------------|------------------|---------|
| DATA SOURCE | USGS | CVRWQCB     | CVRWQCB | CVRWQCB              | CVRWQCB          | CVRWQCB |
| UNITS       | cfs  | °C          | .       | µS/cm                | µg/L             | mg/L    |
| Jun-02-2005 | 168  | 21.6        | 7.5     | 769                  | <0.4             | 0.4     |
| Jun-09-2005 | 229  | 19.9        | 7.4     | 808                  | <0.4             | 0.4     |
| Jun-16-2005 | 230  | 22.2        | 7.5     | 807                  | 0.5              | 0.5     |
| Jun-23-2005 | 160  | 22.6        | NA      | 1,070                | 0.7              | 0.7     |
| Jun-30-2005 | 233  | 24.5        | 7.5     | 886                  | 0.7              | 0.4     |
| Jul-07-2005 | 283  | 24.1        | 7.6     | 801                  | 1.0              | 0.4     |
| Jul-13-2005 | 226  | 28.1        | 7.2     | 779                  | 0.5              | 0.4     |
| Jul-21-2005 | 199  | 26.7        | 7.9     | 911                  | 1.0              | 0.5     |
| Jul-28-2005 | 148  | 25.8        | 7.8     | 1,010                | 0.7              | 0.6     |
| Aug-04-2005 | 159  | 25.6        | 7.7     | 945                  | 0.8              | 0.5     |
| Aug-11-2005 | 190  | 24.8        | 7.6     | 866                  | 0.6              | 0.4     |
| Aug-18-2005 | 172  | 23.8        | 7.4     | 940                  | 0.6              | 0.5     |
| Aug-25-2005 | 146  | 23.3        | 7.7     | 970                  | 0.5              | 0.5     |

Table 12. Weekly water quality monitoring at Station J (Camp 13 Ditch).

See Table 27 for explanation of footnotes and agency abbreviations.

| PARAMETER   | Flow                 | . | . | Specific Conductance | Selenium (total) | Boron   |
|-------------|----------------------|---|---|----------------------|------------------|---------|
| DATA SOURCE | SLDMWA <sup>††</sup> | . | . | CVRWQCB              | CVRWQCB          | CVRWQCB |
| UNITS       | cfs                  | . | . | µS/cm                | µg/L             | mg/L    |
| Jun-01-2005 | 30                   | . | . | 96                   | 0.5              | 0.1     |
| Jun-08-2005 | 30                   | . | . | 103                  | 0.6              | 0.1     |
| Jun-15-2005 | 25                   | . | . | 178                  | 0.7              | 0.2     |
| Jun-22-2005 | 15                   | . | . | 133                  | 0.9              | 0.2     |
| Jun-29-2005 | 10                   | . | . | 119                  | 0.5              | 0.2     |
| Jul-06-2005 | 15                   | . | . | 361                  | 1.1              | 0.3     |
| Jul-13-2005 | 15                   | . | . | 192                  | 0.8              | 0.2     |
| Jul-20-2005 | 15                   | . | . | 352                  | 1.1              | P       |
| Jul-27-2005 | 15                   | . | . | 391                  | 0.9              | 0.3     |
| Aug-03-2005 | 15                   | . | . | 348                  | 1.3              | 0.3     |
| Aug-10-2005 | 15                   | . | . | 334                  | 0.8              | 0.3     |
| Aug-17-2005 | 15                   | . | . | 368                  | 0.7              | 0.2     |
| Aug-24-2005 | 15                   | . | . | 374                  | 0.7              | 0.3     |
| Aug-31-2005 | 15                   | . | . | 400                  | 0.7              | 0.3     |

Table 13. Weekly water quality monitoring at Station K (Agatha Canal).

See Table 27 for explanation of footnotes and agency abbreviations.

| PARAMETER   | Flow                 | . | . | Specific Conductance | Selenium (total) | Boron   |
|-------------|----------------------|---|---|----------------------|------------------|---------|
| DATA SOURCE | SLDMWA <sup>††</sup> | . | . | CVRWQCB              | CVRWQCB          | CVRWQCB |
| UNITS       | cfs                  | . | . | µS/cm                | µg/L             | mg/L    |
| Jun-01-2005 | 40                   | . | . | 86                   | 0.4              | 0.1     |
| Jun-08-2005 | 40                   | . | . | 104                  | 0.7              | 0.1     |
| Jun-15-2005 | 20                   | . | . | 166                  | 0.8              | 0.2     |
| Jun-22-2005 | 20                   | . | . | 118                  | 0.6              | 0.1     |
| Jun-29-2005 | 20                   | . | . | 208                  | 0.7              | 0.2     |
| Jul-06-2005 | 15                   | . | . | 260                  | 0.9              | 0.2     |
| Jul-13-2005 | 0                    | . | . | 154                  | 0.7              | 0.2     |
| Jul-20-2005 | 15                   | . | . | 411                  | 1.0              | P       |
| Jul-27-2005 | 15                   | . | . | 454                  | 1.1              | 0.3     |
| Aug-03-2005 | 15                   | . | . | 343                  | 0.8              | 0.2     |
| Aug-10-2005 | 15                   | . | . | 402                  | 0.9              | 0.2     |
| Aug-17-2005 | 15                   | . | . | 381                  | 0.7              | 0.2     |
| Aug-24-2005 | 40                   | . | . | 374                  | 1.4              | 1.5     |
| Aug-31-2005 | 55                   | . | . | 376                  | 0.7              | 0.2     |

Table 14. Weekly water quality monitoring at Station L2 (San Luis Canal at splits).

See Table 27 for explanation of footnotes and agency abbreviations.

| PARAMETER   | Flow                 | . | . | Specific Conductance | Selenium (total) | Boron   |
|-------------|----------------------|---|---|----------------------|------------------|---------|
| DATA SOURCE | SLDMWA <sup>††</sup> | . | . | CVRWQCB              | CVRWQCB          | CVRWQCB |
| UNITS       | cfs                  | . | . | µS/cm                | µg/L             | mg/L    |
| Jun-01-2005 | 100                  | . | . | 452                  | 0.9              | 0.6     |
| Jun-08-2005 | 80                   | . | . | 384                  | 1.1              | 0.4     |
| Jun-15-2005 | 55                   | . | . | 578                  | 1.6              | 0.7     |
| Jun-22-2005 | 55                   | . | . | 575                  | 1.5              | 0.8     |
| Jun-29-2005 | 55                   | . | . | 668                  | 1.5              | 0.8     |
| Jul-06-2005 | 35                   | . | . | 671                  | 1.6              | 0.6     |
| Jul-13-2005 | 5                    | . | . | 701                  | 1.7              | 0.8     |
| Jul-20-2005 | 0                    | . | . | 1,170                | 1.8              | P       |
| Jul-27-2005 | 0                    | . | . | 1,060                | 1.5              | 1.1     |
| Aug-03-2005 | 5                    | . | . | 1,030                | 1.7              | 1.2     |
| Aug-10-2005 | 5                    | . | . | 1,380                | 2.1              | 1.5     |
| Aug-17-2005 | 5                    | . | . | 958                  | 1.4              | 0.9     |
| Aug-24-2005 | 70                   | . | . | 1,560                | 2.5              | 1.8     |
| Aug-31-2005 | 110                  | . | . | 582                  | 1.0              | 0.4     |

Table 15. Weekly water quality monitoring at Station M2 (Santa Fe Canal at weir).

See Table 27 for explanation of footnotes and agency abbreviations.

| PARAMETER   | Flow                 | . | . | Specific Conductance | Selenium (total) | Boron   |
|-------------|----------------------|---|---|----------------------|------------------|---------|
| DATA SOURCE | SLDMWA <sup>††</sup> | . | . | CVRWQCB              | CVRWQCB          | CVRWQCB |
| UNITS       | cfs                  | . | . | µS/cm                | µg/L             | mg/L    |
| Jun-01-2005 | 26                   | . | . | 666                  | 0.8              | 1.0     |
| Jun-08-2005 | 51                   | . | . | 554                  | 1.0              | 0.9     |
| Jun-15-2005 | 45                   | . | . | 841                  | 1.1              | 1.7     |
| Jun-22-2005 | 24                   | . | . | 1,110                | 1.6              | 2.2     |
| Jun-29-2005 | 45                   | . | . | 857                  | 1.2              | 1.6     |
| Jul-06-2005 | 55                   | . | . | 820                  | 1.5              | 1.2     |
| Jul-13-2005 | 90                   | . | . | 800                  | 1.3              | 1.5     |
| Jul-20-2005 | 44                   | . | . | 928                  | 1.6              | P       |
| Jul-27-2005 | 59                   | . | . | 911                  | 1.3              | 1.4     |
| Aug-03-2005 | 77                   | . | . | 917                  | 1.5              | 1.6     |
| Aug-10-2005 | 65                   | . | . | 973                  | 1.3              | 1.7     |
| Aug-17-2005 | 97                   | . | . | 899                  | 1.0              | 1.2     |
| Aug-24-2005 | 19                   | . | . | 987                  | 0.7              | 0.2     |
| Aug-31-2005 | 3                    | . | . | 897                  | 1.1              | 0.9     |

Table 16. Weekly water quality monitoring at Central California Irrigation District Main Canal at Russell Avenue (MER510).

See Table 27 for explanation of footnotes and agency abbreviations.

| PARAMETER   | . | . | . | Specific Conductance | Selenium (total) | Boron   |
|-------------|---|---|---|----------------------|------------------|---------|
| DATA SOURCE | . | . | . | CVRWQCB              | CVRWQCB          | CVRWQCB |
| UNITS       | . | . | . | µS/cm                | µg/L             | mg/L    |
| Jun-01-2005 | . | . | . | 93                   | 0.5              | 0.1     |
| Jun-08-2005 | . | . | . | 127                  | 1.1              | 0.1     |
| Jun-15-2005 | . | . | . | 184                  | 0.8              | 0.2     |
| Jun-22-2005 | . | . | . | 198                  | 1.1              | 0.2     |
| Jun-29-2005 | . | . | . | 154                  | 0.7              | 0.2     |
| Jul-06-2005 | . | . | . | 264                  | 1.0              | 0.2     |
| Jul-13-2005 | . | . | . | 221                  | 1.1              | 0.2     |
| Jul-20-2005 | . | . | . | 292                  | 0.9              | P       |
| Jul-27-2005 | . | . | . | 307                  | 1.0              | 0.2     |
| Aug-03-2005 | . | . | . | 278                  | 0.8              | 0.2     |
| Aug-10-2005 | . | . | . | 335                  | 0.8              | 0.2     |
| Aug-17-2005 | . | . | . | 368                  | 0.8              | 0.2     |
| Aug-24-2005 | . | . | . | 406                  | 0.8              | 0.3     |
| Aug-31-2005 | . | . | . | 460                  | 1.0              | 0.3     |



Table 17. Weekly water quality monitoring at Station G (San Joaquin River at Fremont Ford).

See Table 27 for explanation of footnotes and agency abbreviations.

| PARAMETER   | Flow  | Temperature | pH      | Specific Conductance | Selenium (total) | Boron   |
|-------------|-------|-------------|---------|----------------------|------------------|---------|
| DATA SOURCE | USGS  | CVRWQCB     | CVRWQCB | CVRWQCB              | CVRWQCB          | CVRWQCB |
| UNITS       | cfs   | °C          | .       | µS/cm                | µg/L             | mg/L    |
| Jun-02-2005 | 4,120 | NA          | NA      | NA                   | NA               | NA      |
| Jun-09-2005 | 3,110 | NA          | NA      | NA                   | NA               | NA      |
| Jun-16-2005 | 898   | 24.0        | 7.0     | 539                  | <0.4             | 0.3     |
| Jun-23-2005 | 559   | 23.9        | NA      | 864                  | 0.5              | 0.4     |
| Jun-30-2005 | 986   | 25.9        | 7.3     | 394                  | <0.4             | 0.2     |
| Jul-07-2005 | 401   | 25.6        | 7.0     | 1,050                | 0.7              | 0.4     |
| Jul-13-2005 | 359   | 27.4        | 7.7     | 947                  | 0.4              | 0.4     |
| Jul-21-2005 | 284   | 27.0        | 7.8     | 1,220                | 0.7              | 0.5     |
| Jul-28-2005 | 240   | 27.2        | 7.8     | 1,310                | 0.5              | 0.5     |
| Aug-04-2005 | 269   | 26.4        | 7.7     | 1,120                | 0.6              | 0.4     |
| Aug-11-2005 | 247   | 26.5        | 7.9     | 1,010                | 0.5              | 0.4     |
| Aug-18-2005 | 291   | 24.9        | 8.0     | 972                  | 0.5              | 0.4     |
| Aug-25-2005 | 224   | 24.3        | 7.5     | 946                  | <0.4             | 0.4     |

Table 18. Weekly water quality monitoring at Station H (San Joaquin River at Hills Ferry).

(Collected data intended for use with biological monitoring.)

See Table 27 for explanation of footnotes and agency abbreviations.

| PARAMETER   | . | . | . | Specific Conductance | Selenium (total) | Boron  |
|-------------|---|---|---|----------------------|------------------|--------|
| DATA SOURCE | . | . | . | SLDMWA               | SLDMWA           | SLDMWA |
| UNITS       | . | . | . | µS/cm                | µg/L             | mg/L   |
| Jun-03-2005 | . | . | . | NA                   | 0.8              | 0.0    |
| Jun-07-2005 | . | . | . | NA                   | <0.4             | 0.0    |
| Jun-14-2005 | . | . | . | NA                   | <0.4             | 0.1    |
| Jun-21-2005 | . | . | . | NA                   | 2.9              | 1.2    |
| Jul-05-2005 | . | . | . | NA                   | 0.5              | 0.2    |
| Jul-12-2005 | . | . | . | NA                   | 4.2              | 1.3    |
| Jul-19-2005 | . | . | . | NA                   | 4.6              | 1.6    |
| Jul-29-2005 | . | . | . | NA                   | 4.0              | 1.6    |
| Aug-02-2005 | . | . | . | NA                   | 4.0              | 1.6    |
| Aug-11-2005 | . | . | . | NA                   | 5.3              | 1.5    |
| Aug-16-2005 | . | . | . | NA                   | 5.2              | 1.5    |
| Aug-23-2005 | . | . | . | NA                   | 5.7              | 1.4    |
| Aug-30-2005 | . | . | . | NA                   | 6.5              | 1.7    |

Table 19. Weekly water quality monitoring at Station N (San Joaquin River at Crow's Landing).

See Table 27 for explanation of footnotes and agency abbreviations.

| PARAMETER   | Flow   | Temperature | pH      | Specific Conductance | Selenium (total) | Boron   |
|-------------|--------|-------------|---------|----------------------|------------------|---------|
| DATA SOURCE | USGS   | CVRWQCB     | CVRWQCB | CVRWQCB              | CVRWQCB          | CVRWQCB |
| UNITS       | cfs    | °C          | .       | µS/cm                | µg/L             | mg/L    |
| Jun-02-2005 | 10,200 | 19.7        | 7.5     | 133                  | <0.4             | 0.1     |
| Jun-09-2005 | 6,530  | 19.1        | 7.0     | 182                  | <0.4             | 0.1     |
| Jun-16-2005 | 3,360  | 21.2        | 7.3     | 414                  | 0.9              | 0.4     |
| Jun-23-2005 | 2,920  | 20.1        | NA      | 403                  | 1.1              | 0.4     |
| Jun-30-2005 | 2,620  | 23.2        | 7.4     | 439                  | 1.0              | 0.4     |
| Jul-07-2005 | 2,080  | 22.3        | 7.5     | 559                  | 1.4              | 0.4     |
| Jul-13-2005 | 1,670  | 23.8        | 7.7     | 691                  | 1.5              | 0.6     |
| Jul-21-2005 | 1,320  | 24.7        | 7.7     | 787                  | 1.7              | 0.5     |
| Jul-28-2005 | 1,140  | 25.1        | 7.9     | 796                  | 1.4              | 0.6     |
| Aug-04-2005 | 1,070  | 24.5        | 7.7     | 778                  | 1.6              | 0.6     |
| Aug-11-2005 | 1,190  | 24.0        | 7.9     | 673                  | 1.9              | 0.5     |
| Aug-18-2005 | 1,340  | 22.6        | 7.9     | 621                  | 1.7              | 0.5     |
| Aug-25-2005 | 1,440  | 21.8        | 7.6     | 538                  | 1.8              | 0.5     |

**Table 20. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from September 2004 to August 2005. Each value is the mean of 4 replicates with 10 fish in each replicate.**

See Table 27 for explanation of footnotes and agency abbreviations.

| LOCATION    | Station B | Station C | Station D | Station F | Delta Mendota Canal | Laboratory Control |
|-------------|-----------|-----------|-----------|-----------|---------------------|--------------------|
| DATA SOURCE | SLDMWA    | SLDMWA    | SLDMWA    | SLDMWA    | SLDMWA              | SLDMWA             |
| UNITS       | %         | %         | %         | %         | %                   | %                  |
| Sep-2004    | 98        | 93        | 95        | 100       | 93                  | 95                 |
| Oct-2004    | 100       | 95        | 98        | 95        | 98                  | 98                 |
| Nov-2004    | 95        | 98        | 58*       | 88        | 98                  | 98                 |
| Dec-2004    | 100       | 68*       | 75*       | 98        | 98                  | 100                |
| Jan-2005    | 98        | 85        | 80        | 100       | 100                 | 98                 |
| Feb-2005    | 95        | 88        | 98        | 80        | 90                  | 98                 |
| Mar-2005    | 88        | 73        | 93        | 83        | 85                  | 73†                |
| Apr-2005    | 95        | 100       | 95        | 93        | 100                 | 90                 |
| May-2005    | 100       | 98        | 93        | 100       | 83                  | 98                 |
| Jun-2005    | 100       | 93        | 98        | 95        | 90                  | 95                 |
| Jul-2005    | 98        | 100       | 95        | 98        | 80                  | 93                 |
| Aug-2005    | 93        | 95        | 95        | 95        | 100                 | 98                 |

**Table 21. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from September 2004 to August 2005. Each value is the mean of 4 replicates with 10 fish in each replicate.**

See Table 27 for explanation of footnotes and agency abbreviations.

| LOCATION    | Station B | Station C | Station D | Station F | Delta Mendota Canal | Laboratory Control |
|-------------|-----------|-----------|-----------|-----------|---------------------|--------------------|
| DATA SOURCE | SLDMWA    | SLDMWA    | SLDMWA    | SLDMWA    | SLDMWA              | SLDMWA             |
| UNITS       | mg        | mg        | mg        | mg        | mg                  | mg                 |
| Sep-2004    | 0.71      | 0.60      | 0.75      | 0.74      | 0.62                | 0.51               |
| Oct-2004    | 0.69      | 0.67      | 0.71      | 0.71      | 0.66                | 0.58               |
| Nov-2004    | 0.58      | 0.62      | 0.41*     | 0.62      | 0.62                | 0.71               |
| Dec-2004    | 0.58      | 0.47      | 0.53      | 0.66      | 0.54                | 0.48               |
| Jan-2005    | 0.62      | 0.57      | 0.51      | 0.61      | 0.54                | 0.46               |
| Feb-2005    | 0.76      | 0.62      | 0.69      | 0.63      | 0.62                | 0.54               |
| Mar-2005    | 0.41      | 0.38      | 0.49      | 0.44      | 0.46                | 0.35               |
| Apr-2005    | 0.42      | 0.40      | 0.44      | 0.42      | 0.38                | 0.29               |
| May-2005    | 0.40      | 0.46      | 0.39      | 0.43      | 0.29                | 0.42               |
| Jun-2005    | 0.51      | 0.50      | 0.50      | 0.50      | 0.47                | 0.36               |
| Jul-2005    | 0.39      | 0.39      | 0.35      | 0.33      | 0.35                | 0.39               |
| Aug-2005    | 0.52      | 0.56      | 0.60      | 0.51      | 0.48                | 0.42               |

**Table 22. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from September 2004 to August 2005. Each value is the mean of 10 replicates with 1 animal in each replicate.**

See Table 27 for explanation of footnotes and agency abbreviations.

| LOCATION    | Station B | Station C | Station D | Station F | Delta Mendota Canal | Laboratory Control |
|-------------|-----------|-----------|-----------|-----------|---------------------|--------------------|
| DATA SOURCE | SLDMWA    | SLDMWA    | SLDMWA    | SLDMWA    | SLDMWA              | SLDMWA             |
| UNITS       | %         | %         | %         | %         | %                   | %                  |
| Sep-2004    | 80        | 100       | 90        | 100       | 100                 | 90                 |
| Oct-2004    | 100       | 100       | 80        | 100       | 100                 | 100                |
| Nov-2004    | 80        | 70        | 90        | 80        | 100                 | 80                 |
| Dec-2004    | 100       | 100       | 90        | 90        | 80                  | 100                |
| Jan-2005    | 100       | 90        | 80        | 100       | 100                 | 90                 |
| Feb-2005    | 80        | 100       | 100       | 90        | 100                 | 30†                |
| Mar-2005    | 80        | 100       | 90        | 100       | 100                 | 90                 |
| Apr-2005    | 90        | 90        | 100       | 90        | 90                  | 100                |
| May-2005    | 90        | 90        | 100       | 100       | 90                  | 90                 |
| Jun-2005    | 90        | 90        | 80        | 90        | 80                  | 100                |
| Jul-2005    | 90        | 100       | 80        | 90        | 80                  | 90                 |
| Aug-2005    | 100       | 100       | 100       | 80        | 80                  | 70†                |

**Table 23. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from September 2004 to August 2005. Each value is the mean of 10 replicates with 1 animal in each replicate.**

See Table 27 for explanation of footnotes and agency abbreviations.

| LOCATION    | Station B           | Station C           | Station D           | Station F           | Delta Mendota Canal | Laboratory Control  |
|-------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| DATA SOURCE | SLDMWA              | SLDMWA              | SLDMWA              | SLDMWA              | SLDMWA              | SLDMWA              |
| UNITS       | neonates per female | neonates per female | neonates per female | neonates per female | neonates per female | neonates per female |
| Sep-2004    | 49.8                | 48.0                | 40.4                | 38.7                | 41.8                | 44.3                |
| Oct-2004    | 48.1                | 39.8                | 29.2*               | 36.6                | 47.0                | 32.1                |
| Nov-2004    | 37.0                | 28.3                | 44.6                | 41.8                | 35.9                | 27.0                |
| Dec-2004    | 30.8                | 30.8                | 32.8                | 34.4                | 26.6                | 31.1                |
| Jan-2005    | 41.7                | 38.8                | 40.2                | 45.9                | 47.6                | 34.7                |
| Feb-2005    | 15.2                | 13.6                | 17.3                | 8.5                 | 12.2                | 4.0                 |
| Mar-2005    | 37.4                | 38.9                | 42.4                | 38.8                | 31.6                | 44.0                |
| Apr-2005    | 26.4                | 35.9                | 42.3                | 37.1                | 30.4                | 27.0                |
| May-2005    | 39.8                | 38.6                | 45.5                | 36.1                | 34.1                | 40.9                |
| Jun-2005    | 41.8                | 35.1                | 36.8                | 42.5                | 30.7                | 31.9                |
| Jul-2005    | 41.8                | 49.4                | 43.1                | 45.5                | 39.6                | 34.0                |
| Aug-2005    | 29.3                | 36.1                | 32.5                | 29.4                | 22.1                | 21.0                |

**Table 24. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from September 2004 to August 2005. Each value is the mean of 4 replicates.**

See Table 27 for explanation of footnotes and agency abbreviations.

| LOCATION    | Station B                | Station C                | Station D                | Station F                | Delta Mendota Canal      | Laboratory Control       |
|-------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| DATA SOURCE | SLDMWA                   | SLDMWA                   | SLDMWA                   | SLDMWA                   | SLDMWA                   | SLDMWA                   |
| UNITS       | 10 <sup>5</sup> cells/mL | 10 <sup>5</sup> cells/mL | 10 <sup>5</sup> cells/mL | 10 <sup>5</sup> cells/mL | 10 <sup>5</sup> cells/mL | 10 <sup>5</sup> cells/mL |
| Sep-2004    | 12.4*                    | 13.4*                    | 15.6                     | 16.3                     | 16.2                     | 14.6                     |
| Oct-2004    | 14.5                     | 22.1                     | 17.7                     | 5.9*                     | 16.6                     | 16.8                     |
| Nov-2004    | 18.5                     | 21.1                     | 20.4                     | 22.0                     | 16.5                     | 17.6                     |
| Dec-2004    | 0.9*                     | 10.4                     | 12.2                     | 23.4                     | 3.5                      | 15.6                     |
| Jan-2005    | 1.3*                     | 12.7                     | 10.6*                    | 18.0                     | 13.7                     | 16.2                     |
| Feb-2005    | 13.7                     | 17.7                     | 19.5                     | 10.7*                    | 13.1                     | 22.4                     |
| Mar-2005    | 14.9                     | 20.1                     | 19.7                     | 20.7                     | 11.5                     | 16.0                     |
| Apr-2005    | 17.4                     | 25.6                     | 21.1                     | 19.6                     | 19.2                     | 24.5                     |
| May-2005    | 24.0                     | 23.5                     | 24.5                     | 19.7                     | 16.1                     | 30.4                     |
| Jun-2005    | 21.4                     | 17.8                     | 21.2                     | 14.6                     | 16.3                     | 20.6                     |
| Jul-2005    | 10.0*                    | 13.0                     | 7.4*                     | 7.7*                     | 11.9                     | 13.0                     |
| Aug-2005    | 6.1*                     | 21.0                     | 7.3*                     | 22.9                     | 16.7                     | 18.2                     |

**Table 25. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, June 2005 to August 2005.**

See Table 27 for explanation of footnotes and agency abbreviations.

| LOCATION    | Station B   | Station C   | Station D   | Station F   | Delta Mendota Canal |
|-------------|-------------|-------------|-------------|-------------|---------------------|
| DATA SOURCE | SLDMWA/USBR | SLDMWA/USBR | SLDMWA/USBR | SLDMWA/USBR | SLDMWA/USBR         |
| UNITS       | µg/L        | µg/L        | µg/L        | µg/L        | µg/L                |
| Jun-06-2005 | 38          | 0.6         | 12          | <0.4        | <0.4                |
| Jun-08-2005 | 31          | 0.5         | 14          | <0.4        | 0.4                 |
| Jun-10-2005 | 37          | 0.5         | 21          | 0.5         | <0.4                |
| Jul-18-2005 | 36          | 0.7         | 24          | 0.5         | <0.4                |
| Jul-20-2005 | 36          | 1.0         | 19          | 0.4         | <0.4                |
| Jul-22-2005 | 39          | 1.0         | 22          | 0.5         | <0.4                |
| Aug-15-2005 | 45          | 0.4         | 31          | 0.8         | <0.4                |
| Aug-17-2005 | 38          | 0.6         | 31          | 0.5         | <0.4                |
| Aug-19-2005 | 38          | 0.6         | 26          | 0.4         | <0.4                |

**Table 26. Summary of total suspended solids concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, June 2005 to August 2005.**

See Table 27 for explanation of footnotes and agency abbreviations.

| LOCATION    | Station B | Station C | Station D | Station F | Delta Mendota Canal |
|-------------|-----------|-----------|-----------|-----------|---------------------|
| DATA SOURCE | SLDMWA    | SLDMWA    | SLDMWA    | SLDMWA    | SLDMWA              |
| UNITS       | mg/L      | mg/L      | mg/L      | mg/L      | mg/L                |
| Jun-06-2005 | 53        | 55        | 43        | 108       | 17                  |
| Jun-08-2005 | 43        | 53        | 55        | 115       | 48                  |
| Jun-10-2005 | 38        | 87        | 71        | 125       | 24                  |
| Jul-18-2005 | 18        | 72        | 75        | 161       | 31                  |
| Jul-20-2005 | 36        | 83        | 45        | 113       | 43                  |
| Jul-22-2005 | 54        | 175       | 102       | 212       | 37                  |
| Aug-15-2005 | 34        | 117       | 42        | 175       | 30                  |
| Aug-17-2005 | 35        | 81        | 49        | 162       | 1                   |
| Aug-19-2005 | 70        | 129       | 98        | 190       | 24                  |

**Table 27. Explanations of footnotes and agency abbreviations.**

| <b>Footnote</b> | <b>Explanation</b>  |
|-----------------|---|
| CVRWQCB         | California Regional Water Quality Control Board, Central Valley Region  |
| SLDMWA          | San Luis & Delta-Mendota Water Authority  |
| USBR            | U.S. Bureau of Reclamation  |
| USGS            | U.S. Geological Survey  |
| e               | Estimated value   |
| .               | Not applicable  |
| <               | Less than MDL. If needed in calculation, use 1/2 MDL  |
| NA              | Not analyzed - operator error, data will not be available in the future   |
| NP              | Not Provided. Data may be available in the future.  |
| NT              | Not tested  |
| P               | Pending, data not available at this time but will be available in the future  |
| *               | Significantly reduced from Delta Mendota Canal (p<0.05)   |
| **              | Sample re-analyzed and result confirmed.  |
| †               | DMC water failed to meet the survival (>80%) acceptability criteria.  |
| ††              | Data from records of the Grassland Water District. Data is not subjected to the criteria documented in the Compliance Monitoring Program for the Use and Operation of the Grassland Bypass Project (1996) nor the Quality Assurance Project Plan for the GBP. |
| †††             | DMC water failed to meet the reproduction (>10 neonates/adult) acceptability criteria.  |
| ††††            | DMC water failed to meet minimum growth (10 <sup>6</sup> cell/mL) acceptability criteria.   |
| ‡               | Control value exceeds suggested maximum variance (20%) acceptability criteria.  |
| ‡‡              | Fungal growth observed on test organisms.   |
| ‡‡‡             | Failed cell density requirement of 1E6 cells.   |
| #               | New testing laboratory with reporting limit of 0.4 µg/L as of June 1998.  |
| √               | Based on definitive bioassay, NOEC is 50 percent  |
| D               | Sample was dechlorinated  |