

| Sampling Date   | Station Name | Station ID  | Hydrologic Subarea | Station Location   | Ammonia-N | Nitrate, as N | Nitrite-N | Total Kjeldahl Nitrogen | Orthophosphate-P | Total Phosphate as P (revised) | Total Phosphate as PO <sub>4</sub> | Total Dissolved Solids | Turbidity, NTU | Calcium | Sodium | Magnesium | Potassium | Chloride | Sulfate | Total Hardness | Ec. umhos | Antimony | Arsenic |
|-----------------|--------------|-------------|--------------------|--|-----------|---------------|-----------|-------------------------|------------------|--------------------------------|------------------------------------|------------------------|----------------|---------|--------|-----------|-----------|----------|---------|----------------|-----------|----------|---------|
|                 |              |             |                    |  | 0.14      | 0.20          | 0.01      | 0.1                     | 0.02             | 5.0                            |                                    | 10.0                   |                | 0.10    | 0.25   | 0.15      | 0.56      | 1.0      | 40.0    | 1.0            |           | 0.005    | 0.0     |
| Detection Limit |              |             |                    |  |           |               |           |                         |                  |                                |                                    |                        |                |         |        |           |           |          |         |                |           |          |         |
| 5/20/98         | LAC-CB-T1    | DFG-978-300 | —                  | Loma Alta Creek at College Blvd  | 0.23      | 0.61          | 0.04      | 0.70                    | 0.12             | 0.40                           |                                    | 2800                   | 0.98           |         |        |           |           |          |         |                |           |          |         |
| 5/20/98         | BVC-SVW-T3   | DFG-978-301 | —                  | Buena Vista Creek at South Vista Way   | <.14      | 2.50          | 0.02      | 0.42                    | 0.22             | 0.22                           |                                    | 1378                   | 0.79           |         |        |           |           |          |         |                |           |          |         |
| 5/20/98         | SLRR-FR-T1   | DFG-978-302 | ✓                  | San Luis Rey River at Foussat Road   | <.14      | 2.40          | 0.01      | 0.39                    | 0.58             | 0.24                           |                                    | 850                    | 5.10           |         |        |           |           |          |         |                |           |          |         |
| 5/20/98         | LAC-ECR-A    | DFG-978-303 | ✓                  | Loma Alta Creek at El Camino Real  | <.14      | 0.27          | 0.00      | 0.36                    | 0.44             | 0.14                           |                                    | 2459                   | 0.58           |         |        |           |           |          |         |                |           |          |         |
| 6/2/98          | SR-79        | DFG-978-304 | ✓                  | Sweetwater River at Hwy 79 near Interstate 8   | <.14      | 0.33          | 0.00      | 0.29                    | 0.13             | 0.13                           |                                    | 224                    | 1.90           |         |        |           |           |          |         |                |           |          |         |
| 6/2/98          | SR-94        | DFG-978-305 | ✓                  | Sweetwater River upstream of Hwy 94 (Campo Road)   | <.14      | 0.36          | 0.01      | 0.16                    | 0.07             | 0.06                           |                                    | 397                    | 2.80           |         |        |           |           |          |         |                |           |          |         |
| 6/2/98          | SR-WS        | DFG-978-306 | ✓                  | Sweetwater River downstream of Willow Street   | <.14      | 0.35          | 0.01      | 0.40                    | 0.05             | 0.20                           |                                    | 825                    | 0.76           |         |        |           |           |          |         |                |           |          |         |
| 6/2/98          | SDR-MD       | DFG-978-307 | 7.11               | San Diego River up stream of Mission Dam   | 0.19      | 0.35          | 0.02      | 0.38                    | 0.22             | 0.09                           |                                    | 1038                   | 3.70           |         |        |           |           |          |         |                |           |          |         |
| 6/2/98          | SDR-MT       | DFG-978-308 | 7.11               | San Diego River at Mission Trails Regional Park  | <.14      | 0.28          | 0.01      | 0.49                    | 0.14             | 0.05                           |                                    | 1046                   | 0.77           |         |        |           |           |          |         |                |           |          |         |
| 6/2/98          | SDR-FVR      | DFG-978-309 | 7.11               | San Diego River at Fashion Valley Road   | <.14      | 0.23          | 0.00      | 0.42                    | 0.23             | 0.06                           |                                    | 1217                   | 5.00           |         |        |           |           |          |         |                |           |          |         |
| 6/3/98          | LPC-BMR      | DFG-978-310 | —                  | Los Penasquitos Creek upstream of Black Mountain Road  | <.14      | 0.34          | 0.01      | 0.76                    | 0.30             | 0.55                           |                                    | 1678                   | 0.67           |         |        |           |           |          |         |                |           |          |         |
| 6/3/98          | LPC-CCR      | DFG-978-311 | ✓                  | Los Penasquitos Creek at Cobblestone Creek Road.   | <.14      | 1.10          | 0.03      | 1.90                    | 0.17             | 0.55                           |                                    | 1633                   | 3.80           |         |        |           |           |          |         |                |           |          |         |
| 6/3/98          | RC-HP        | DFG-978-312 | 6.20               | Rattlesnake Creek at Hilleary Park, off Community Road                                       | <.14      | 1.50          | 0.02      | 1.50                    | 0.46             | 0.67                           |                                    | 1412                   | 0.54           |         |        |           |           |          |         |                |           |          |         |
| 6/3/98          | EC-HRB       | DFG-978-313 | 4.60               | Escondido Creek below Harmony Grove Bridge.  | <.14      | 7.20          | 0.07      | 0.46                    | 0.46             | 0.37                           |                                    | 1196                   | 0.99           |         |        |           |           |          |         |                |           |          |         |
| 6/3/98          | EC-EF        | DFG-978-314 | 4.60               | Escondido Creek at intersection Elfin Forest and Harmony Grove (end of Elfin Forest Resort). | <.14      | 6.90          | 0.02      | 0.55                    | 0.77             | 0.29                           |                                    | 1145                   | 0.38           |         |        |           |           |          |         |                |           | ND       | 3.8     |
| 6/3/98          | EC-LCA       | DFG-978-315 | —                  | Encinitas Creek at Green Valley Road   | <.14      | 0.34          | <.01      | 0.54                    | 0.34             | 0.32                           |                                    | 2082                   | 3.70           |         |        |           |           |          |         |                |           |          |         |
| 6/3/98          | SMC-RSFR     | DFG-978-316 | 4.51               | San Marcos Creek at Rancho Santa Fe Road   | <.14      | 0.00          | 0.01      | 0.60                    | 0.42             | 0.52                           |                                    | 780                    | 0.99           |         |        |           |           |          |         |                |           |          |         |
| 6/3/98          | SMC-M        | DFG-978-317 | 4.51               | San Marcos Creek at McMahr   | <.14      | 6.20          | 0.04      | 0.62                    | 0.49             | 0.56                           |                                    | 1346                   | 13.80          |         |        |           |           |          |         |                |           |          |         |
| 6/9/98          | MC-WB        | DFG-978-318 | ✓                  | Murrieta Creek at Calle Del Oso Rd   | <.14      | 1.29          | <.01      | 0.31                    | 0.21             | 0.28                           |                                    | 709                    | 0.38           |         |        |           |           |          |         |                |           | ND       | 3.0     |
| 6/9/98          | MC-GS        | DFG-978-319 | ✓                  | Murrieta Ck behind cement factory  | <.14      | 0.32          | 0.01      | 0.44                    | 0.09             | 0.06                           |                                    | 753                    | 2.31           |         |        |           |           |          |         |                |           | ND       | 3.1     |
| 6/9/98          | TC-115       | DFG-978-320 | ✓                  | Temecula Ck east of confluence, west of I-15   | <.14      | 1.40          | 0.01      | 0.44                    | 0.30             | 0.17                           |                                    | 840                    | 0.67           |         |        |           |           |          |         |                |           | ND       | 3.1     |

| Sampling Date | Station Name | Station ID  | Hydrologic Subarea | Station Location   | Beryllium                               | Cadmium | Chromium, Total | Chromium, Dissolved | Copper | Lead, Total | Lead, Dissolved | Mercury | Nickel | Selenium | Silver | Thallium | Zinc, Total | Zinc, Dissolved | Ceriodaphnia-survival | Ceriodaphnia-reproduction | Pimephales-survival | Pimephales-growth |
|---------------|--------------|-------------|--------------------|--|---|---------|-----------------|---------------------|--------|-------------|-----------------|---------|--------|----------|--------|----------|-------------|-----------------|-----------------------|---------------------------|---------------------|-------------------|
|               |              |             |                    |  | 0.0005                                  | 0.0005  | 0.4             | 0.01                | 0.01   | 0.001       | 0.001           | 0.0005  | 0.01   | 0.002    | 0.01   | 0.001    | 0.01        | 0.01            |                       |                           |                     |                   |
| 5/20/98       | LAC-CB-T1    | DFG-978-300 |                    | Loma Alta Creek at College Blvd  |   |         |                 |                     |        |             |                 |         |        |          |        |          |             |                 |                       |                           |                     |                   |
| 5/20/98       | BVC-SVW-T3   | DFG-978-301 |                    | Buena Vista Creek at South Vista Way   |   |         |                 |                     |        |             |                 |         |        |          |        |          |             |                 |                       |                           |                     |                   |
| 5/20/98       | SLRR-FR-T1   | DFG-978-302 |                    | San Luis Rey River at Foussat Road   |   |         |                 |                     |        |             |                 |         |        |          |        |          |             |                 |                       |                           |                     |                   |
| 5/20/98       | LAC-ECR-A    | DFG-978-303 |                    | Loma Alta Creek at El Camino Real  |   |         |                 |                     |        |             |                 |         |        |          |        |          |             |                 |                       |                           |                     |                   |
| 6/2/98        | SR-79        | DFG-978-304 |                    | Sweetwater River at Hwy 79 near Interstate 8   |   |         |                 |                     |        |             |                 |         |        |          |        |          |             |                 |                       |                           |                     |                   |
| 6/2/98        | SR-94        | DFG-978-305 |                    | Sweetwater River upstream of Hwy 94 (Campo Road)   |   |         |                 |                     |        |             |                 |         |        |          |        |          |             |                 |                       |                           |                     |                   |
| 6/2/98        | SR-WS        | DFG-978-306 |                    | Sweetwater River downstream of Willow Street   |   |         |                 |                     |        |             |                 |         |        |          |        |          |             |                 |                       |                           |                     |                   |
| 6/2/98        | SDR-MD       | DFG-978-307 | 7.11               | San Diego River up stream of Mission Dam   |   |         |                 |                     |        |             |                 |         |        |          |        |          |             |                 |                       |                           |                     |                   |
| 6/2/98        | SDR-MT       | DFG-978-308 | 7.11               | San Diego River at Mission Trails Regional Park  |   |         |                 |                     |        |             |                 |         |        |          |        |          |             |                 |                       |                           |                     |                   |
| 6/2/98        | SDR-FVR      | DFG-978-309 | 7.11               | San Diego River at Fashion Valley Road   |   |         |                 |                     |        |             |                 |         |        |          |        |          |             |                 |                       |                           |                     |                   |
| 6/3/98        | LPC-BMR      | DFG-978-310 |                    | Los Penasquitos Creek upstream of Black Mountain Road  |   |         |                 |                     |        |             |                 |         |        |          |        |          |             |                 |                       |                           |                     |                   |
| 6/3/98        | LPC-CCR      | DFG-978-311 |                    | Los Penasquitos Creek at Cobblestone Creek Road.   |   |         |                 |                     |        |             |                 |         |        |          |        |          |             |                 |                       |                           |                     |                   |
| 6/3/98        | RC-HP        | DFG-978-312 | 6.20               | Rattlesnake Creek at Hilleary Park, off Community Road                                       |   |         |                 |                     |        |             |                 |         |        |          |        |          |             |                 |                       |                           |                     |                   |
| 6/3/98        | EC-HRB       | DFG-978-313 | 4.60               | Escondido Creek below Harmony Grove Bridge.  |   |         |                 |                     |        |             |                 |         |        |          |        |          |             |                 |                       |                           |                     |                   |
| 6/3/98        | EC-EF        | DFG-978-314 | 4.60               | Escondido Creek at intersection Elfin Forest and Harmony Grove (end of Elfin Forest Resort). | ND                                      | ND      | 11.0            |                     | 13.7   | 150         |                 | ND      | 2.4    | ND       | ND     | ND       | 72.8        |                 |                       |                           |                     |                   |
| 6/3/98        | EC-LCA       | DFG-978-315 |                    | Encinitas Creek at Green Valley Road   |   |         |                 |                     |        |             |                 |         |        |          |        |          |             |                 |                       |                           |                     |                   |
| 6/3/98        | SMC-RSFR     | DFG-978-316 | 4.51               | San Marcos Creek at Rancho Santa Fe Road   | These are in units of mg/kg wet weight. |         |                 |                     |        |             |                 |         |        |          |        |          |             |                 |                       |                           |                     |                   |
| 6/3/98        | SMC-M        | DFG-978-317 | 4.51               | San Marcos Creek at McMahr   | These are in units of mg/kg wet weight. |         |                 |                     |        |             |                 |         |        |          |        |          |             |                 |                       |                           |                     |                   |
| 6/9/98        | MC-WB        | DFG-978-318 |                    | Murrieta Creek at Calle Del Oso Rd   | ND                                      | 1.1     | 16.2            |                     | 26.3   | 36.7        |                 | 0.068   | 9.4    | ND       | ND     | ND       | 182         |                 |                       |                           |                     |                   |
| 6/9/98        | MC-GS        | DFG-978-319 |                    | Murrieta Ck behind cement factory  | ND                                      | ND      | 2.8             |                     | 6.1    | 9.2         |                 | ND      | 1.9    | ND       | ND     | 3.0      | 53.8        |                 |                       |                           |                     |                   |
| 6/9/98        | TC-115       | DFG-978-320 |                    | Temecula Ck east of confluence, west of I-15   |   |         |                 |                     |        |             |                 |         |        |          |        |          |             |                 |                       |                           |                     |                   |

| Sampling Date | Station Name | Station ID      | Hydrologic Subarea | Station Location   | Ammonia-N | Nitrate as N | Nitrite-N | Total Kjeldahl Nitrogen | Orthophosphate-P | Total Phosphate as P (revised) | Total Phosphate as PO <sub>4</sub> | Total Dissolved Solids | Turbidity, NTU | Calcium | Sodium | Magnesium | Potassium | Chloride | Sulfate | Total Hardness | Ec. umhos | Antimony | Arsenic |
|---------------|--------------|-----------------|--------------------|--|-----------|--------------|-----------|-------------------------|------------------|--------------------------------|------------------------------------|------------------------|----------------|---------|--------|-----------|-----------|----------|---------|----------------|-----------|----------|---------|
| 6/9/98        | RC-WGR       | DFG-978-321     | ✓                  | Rainbow Creek at Willow Glen Rd                              | <.14      | 11.47        | 0.02      | 0.44                    | 0.95             | 0.77                           |                                    | 810                    | 0.30           |         |        |           |           |          |         |                |           |          |         |
| 6/9/98        | SMR-WGR      | DFG-978-322     | —                  | Santa Margarita at Willow Glen Rd (Stage Coach Ln).          | <.14      | 3.76         | 0.02      | 0.47                    | 0.11             | 0.62                           |                                    | 913                    | 0.46           |         |        |           |           |          |         |                |           |          |         |
| 6/9/98        | SMR-SCD      | DFG-978-323     | ✓                  | SMR at DeLuz/ Pico Rd near Sandia Ck                         | <.14      | 4.69         | 0.01      | 0.34                    | 0.18             | 0.35                           |                                    | 923                    | 0.50           |         |        |           |           |          |         |                |           |          |         |
| 6/9/98        | SC-SCR       | DFG-978-324     | —                  | Sandia Ck at Sandia Ck Rd, 0.5 to 1 mile above confluence    | <.14      | 5.83         | 0.01      | 0.17                    | 0.24             | 0.30                           |                                    | 817                    | 1.80           |         |        |           |           |          |         |                |           | ND       | 7.8     |
| 6/9/98        | SMR-CP       | DFG-978-325     | ✓                  | Santa Margarita River below diversion weir on Camp Pendleton | <.14      | 2.71         | 0.01      | 0.34                    | 0.23             | 0.41                           |                                    | 667                    | 3.77           |         |        |           |           |          |         |                |           | ND       | 5.9     |
| 6/9/98        | SMR-SMB      | DFG-978-326     | ✓                  | SMR at Stuart Mesa Rd bridge on Camp Pendleton               | <.14      | 1.63         | 0.01      | 0.28                    | 0.23             | 0.35                           |                                    | 713                    | 3.60           |         |        |           |           |          |         |                |           | ND       | 2.3     |
| 6/10/98       | BVR-ED       | DFG-978-327     | ✓                  | San Marcos Creek at Rancheros Drive                          | <.14      | 14.70        | 0.05      | 0.53                    | 0.14             | 0.95                           |                                    | 1372                   | 0.49           |         |        |           |           |          |         |                |           |          |         |
| 6/10/98       | AHC-SA       | DFG-978-328     | —                  | Agua Hedionda Ck at Sycamore Ave                             | 0.17      | 15.30        | 0.08      | 0.58                    | 1.00             | 0.90                           |                                    | 1144                   | 1.10           |         |        |           |           |          |         |                |           |          |         |
| 6/10/98       | SMC-SP       | DFG-978-329     | ✓                  | Buena Vista Ck at Wildwood Park                              | 0.23      | 3.40         | 0.09      | 0.62                    | 0.12             | 0.75                           |                                    | 1360                   | 1.70           |         |        |           |           |          |         |                |           |          |         |
| 6/10/98       | AC-CCR       | DFG-978-330     | —                  | Aliso Ck along Country Club Rd                               | 3.30      | 3.10         | 1.00      | 0.81                    | 1.10             | 0.93                           |                                    | 1712                   | 4.10           |         |        |           |           |          |         |                |           | ND       | 1.2     |
| 6/10/98       | AC-PPD       | DFG-978-331     | ✓                  | Aliso Ck at Pacific Park Dr/ Oso Pkwy                        | 0.18      | 1.00         | 0.03      | 0.56                    | 0.15             | 0.81                           |                                    | 1961                   | 1.10           |         |        |           |           |          |         |                |           |          |         |
| 6/10/98       | AHC-ECR      | DFG-978-332     | ✓                  | Agua Hedionda Ck at El Camino Real                           | <.14      | 5.80         | 0.02      | 0.53                    | 0.44             | 0.61                           |                                    | 1716                   | 0.55           |         |        |           |           |          |         |                |           |          |         |
| 6/11/98       | SLRR-395     | DFG-978-333     | ✓                  | San Luis Rey River at old Hwy 395 (Couser Canyon Rd)         | <.14      | 4.20         | 0.03      | 0.42                    | 0.75             | 0.99                           |                                    | 970                    | 3.73           |         |        |           |           |          |         |                |           |          |         |
| 6/29/98       |              | LLP-978-405-BUV | ✓                  | Buena Vista Creek  | <.14      | 1.20         | 0.02      | 0.64                    | 0.83             |                                | 7.1                                | 1133                   | 1.3            | 120     | 254    | 80.7      | 3.6       | 454      | 281     | 570            | 1965      | ND       | ND      |
| 6/29/98       |              | LLP-978-405-AGH | ✓                  | Agua Hedionda Creek  | <.14      | 4.50         | 0.03      | 0.76                    | 0.25             |                                | 4.2                                | 1624                   | 0.6            | 168     | 255    | 97.9      | 3.3       | 465      | 363     | 745            | 2300      | ND       | ND      |
| 6/29/98       |              | LLP-978-405-ESC | ✓                  | Escondido Creek  | <.14      | 3.60         | 0.01      | 0.76                    | 0.25             |                                | 4.6                                | 1382                   | 4.4            | 109     | 251    | 87.5      | 3.4       | 322      | 342     | 570            | 1969      | ND       | ND      |

These ar



**From:** Linda Pardy  
**To:** Tracy\_Weddle@nps.gov  
**Date:** 3/5/01 2:45PM  
**Subject:** Re: Cabrillo National Monument Water Quality Data

Tracy, FYI. In reply to your email:

The source of 1998 water quality data was the San Diego Regional Water Quality Control Board (Regional Board). The Regional Board collected water samples at selected sites throughout the Region to scan sites for elevated levels of the sampled parameters. The June 1998 sampling was limited to those samples/constituents shown. The samples were delivered to the lab by the Regional Board. The contract lab which did the analyses was Truesdail Laboratories, Inc is located at 14201 Franklin Ave; Tustin, CA 92780-7008. The project manager at that time for the testing was Divina B. Pascual. Their phone number was 714 730-6239. -Linda

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 Linda Pardy, Environmental Specialist  
 California Regional Water Quality Control Board  
 San Diego Region  
 9771 Clairemont Mesa Blvd, Suite A  
 San Diego, CA 92124-1324  
 (858) 627-3932, fax (858) 571-6972  
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 Primary Office Phone Number (858) 467-2952  
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The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways to reduce demand and cut your energy costs, see the tips at: <http://www.swrcb.ca.gov/news/echallenge.html>

>>> <Tracy\_Weddle@nps.gov> 03/05/01 10:18AM >>>  
 Ms. Pardy,

I am currently establishing a baseline water quality report for Cabrillo National Monument for the National Park Service. I am taking over the work of Brett Atkinson, whom you spoke to previously. Brett prepared the data which you sent him for these reports, but there is one bit of information missing before these reports can be completed and the data uploaded to the EPA database STORET. A paragraph description is needed, describing the source of data and purpose for data collection and monitoring. I have looked on your agency's website to try and determine this, but there are so many projects that I could not determine where the data you sent came from. Could you please describe to me what the monitoring was for, the extent of monitoring, and any other information you feel is significant? I am attaching a copy of the data you sent in case you are unsure about what data I'm referring to. Thank you for your help!

Sincerely,

Tracy Weddle  
 Water Quality Data Analyst  
 National Park Service  
 Water Resources Division  
 1201 Oakridge Drive, Suite 250  
 Fort Collins, CO 80525

**Table 1**  
 Toxic Substances Monitoring Program  
 Preliminary Summary of 1999 Data: Trace Elements in Fish and Clams (ppm, wet weight)

| Station Number | Station Name                     | Species Code | Tissue | Sample Date | Arsenic | Cadmium | Chromium | Copper | Lead    | Mercury | Nickel | Selenium | Silver  | Zinc  |
|----------------|----------------------------------|--------------|--------|-------------|---------|---------|----------|--------|---------|---------|--------|----------|---------|-------|
| 801.11.89      | Lower Newport Bay/Rhine Ch       | YFC          | L      | 08/10/99    | NA      | NA      | 0.089    | 5.3300 | 0.1290  | NA      | NA     | NA       | 0.0060  | 23.90 |
| 801.11.96      | Peters Canyon Channel            | PRS          | W      | 08/05/99    | 0.179   | 0.0350  | 0.121    | 1.2300 | 0.0300  | 0.048   | 0.1370 | 4.110    | <0.0020 | 45.80 |
| 801.11.96      | Peters Canyon Channel            | PRS          | W      | 08/05/99    | 0.190   | 0.0360  | 0.171    | 1.2900 | 0.0380  | 0.040   | 0.1390 | 4.240    | 0.0030  | 44.70 |
| 801.11.99      | Upper Newport Bay/Newport Dunes  | ORC          | F      | 08/04/99    | 1.300   | <0.0020 | NA       | NA     | NA      | 0.050   | 0.0170 | 0.760    | NA      | NA    |
| 801.11.99      | Upper Newport Bay/Newport Dunes  | ORC          | L      | 08/04/99    | NA      | NA      | 0.088    | 6.2600 | 0.0080  | NA      | NA     | NA       | <0.0020 | 18.40 |
| 901.12.##      | Aliso Cr/Pacific Park Dr         | PRS          | W      | 08/27/99    | 0.245   | 0.2240  | 0.110    | 1.3000 | 0.0710  | <0.015  | 0.1950 | 1.610    | <0.0020 | 32.50 |
| 902.11.01      | Santa Margarita R/Stuart Mesa Rd | CKF          | W      | 08/25/99    | 0.221   | 0.0050  | 0.050    | 1.1200 | 0.0320  | <0.015  | 0.1900 | 0.248    | 0.0270  | 28.30 |
| 902.22.03      | Rainbow Creek                    | GSF          | F      | 08/26/99    | 0.031   | <0.0020 | NA       | NA     | NA      | 0.051   | 0.0080 | 0.388    | NA      | NA    |
| 902.22.03      | Rainbow Creek                    | GSF          | L      | 08/26/99    | NA      | NA      | 0.067    | 2.4500 | 0.0100  | NA      | NA     | NA       | <0.0020 | 16.70 |
| 902.32.##      | Murrietta Cr/u/s Temecula Cr     | BLB          | F      | 08/26/99    | 0.036   | <0.0020 | NA       | NA     | NA      | 0.059   | 0.0370 | 0.287    | NA      | NA    |
| 902.32.##      | Murrietta Cr/u/s Temecula Cr     | BLB          | L      | 08/26/99    | NA      | NA      | 0.100    | 9.2500 | 0.0070  | NA      | NA     | NA       | 0.0290  | 19.20 |
| 904.10.##      | Loma Alta Cr/College Blvd        | GAM          | W      | 08/26/99    | 0.217   | 0.0220  | 0.236    | 3.6900 | 0.0770  | 0.061   | 0.1990 | 0.371    | 0.0340  | 37.70 |
| 904.21.02      | Buena Vista Lagoon               | LMB          | F      | 08/25/99    | 0.072   | <0.0020 | NA       | NA     | NA      | 0.054   | 0.0100 | 0.392    | NA      | NA    |
| 904.21.02      | Buena Vista Lagoon               | LMB          | L      | 08/25/99    | NA      | NA      | 0.122    | 3.8300 | 0.0210  | NA      | NA     | NA       | 0.0060  | 21.90 |
| 904.31.##      | Agua Hedionda Cr/El Camino Real  | GAM          | W      | 08/24/99    | 0.386   | 0.0250  | 0.220    | 1.3400 | 0.0380  | <0.015  | 0.1520 | 0.461    | 0.0050  | 25.90 |
| 904.51.03      | San Marcos Cr                    | LMB          | F      | 08/24/99    | 0.045   | <0.0020 | NA       | NA     | NA      | 0.046   | 0.0230 | 0.335    | NA      | NA    |
| 904.51.03      | San Marcos Cr                    | LMB          | L      | 08/24/99    | NA      | NA      | 0.193    | 3.0800 | <0.0020 | NA      | NA     | NA       | <0.0020 | 16.00 |
| 904.61.07      | Escondido Cr/Elfin Forest Park   | GSF          | F      | 08/24/99    | 0.064   | 0.0010  | NA       | NA     | NA      | 0.050   | 0.3410 | 0.496    | NA      | NA    |
| 904.61.07      | Escondido Cr/Elfin Forest Park   | GSF          | L      | 08/24/99    | NA      | NA      | 0.070    | 2.4400 | 0.0100  | NA      | NA     | NA       | 0.0050  | 17.30 |
| 907.11.03      | San Diego R/u/s Taylor St        | LMB          | F      | 08/23/99    | 0.096   | <0.0020 | NA       | NA     | NA      | 0.035   | 0.0150 | 0.854    | NA      | NA    |
| 907.11.03      | San Diego R/u/s Taylor St        | LMB          | L      | 08/23/99    | NA      | NA      | 0.112    | 5.9400 | 0.0130  | NA      | NA     | NA       | 0.0130  | 23.10 |

L = Liver. F = Filet. W = Whole Body. < = Below Indicated Detection Limit. NA = Not Analyzed.  
 Species codes are listed in Table 3.

**TABLE 2**  
**Toxic Substances Monitoring Program**  
**Preliminary Summary of 1999 Data: Organic Chemicals in Fish and Clams (ppb, wet weight)**

| Station Number | Station Name                       | Species Code | Tissue Type | Sample Date | Aldrin | alpha-Chlor-dene | cis-Chlor-dane | gamma-Chlor-dene | trans-Chlor-dane | cis-Nona-chlor | trans-Nona-chlor | Oxy-chlor-dane | Total Chlor-dane | Chlor-pyrifos | Dacthal |
|----------------|------------------------------------|--------------|-------------|-------------|--------|------------------|----------------|------------------|------------------|----------------|------------------|----------------|------------------|---------------|---------|
| 801.11.09      | San Diego Cr/Barranca Pkwy         | PRS          | W           | 08/05/99    | <1.0   | <1.0             | 4.2            | <1.0             | 2.3              | 2.3            | 5.7              | 2.1            | 16.6             | <2.0          | <2.0    |
| 801.11.89      | Lower Newport Bay/Rhine Ch         | YFC          | F           | 08/10/99    | <1.0   | <1.0             | <2.0           | <1.0             | <2.0             | <2.0           | <1.0             | <1.0           | ND               | <2.0          | <2.0    |
| 801.11.96      | Peters Canyon Channel              | PRS          | W           | 08/05/99    | <1.0   | <1.0             | 3.2            | <1.0             | 2.6              | 2.9            | 9.1              | 1.4            | 19.3             | 4.2           | <2.0    |
| 801.11.96      | Peters Canyon Channel              | PRS          | W           | 08/05/99    | <1.0   | <1.0             | 3.3            | <1.0             | 2.8              | 3.2            | 9.8              | 1.5            | 20.7             | 5.2           | <2.0    |
| 801.11.99      | Upper Newport Bay/Newport Dunes    | ORC          | F           | 08/04/99    | <1.0   | <1.0             | <2.0           | <1.0             | <2.0             | <2.0           | 1.9              | <1.0           | 1.9              | <2.0          | <2.0    |
| 901.12.##      | Aliso Cr/Pacific Park Dr ✓         | PRS          | W           | 08/27/99    | <1.0   | <1.0             | 5.4            | 1.2              | 2.0              | <2.0           | 5.3              | 3.6            | 17.5             | 4.3           | 4.1     |
| 902.11.01      | Santa Margarita R/Stuart Mesa Rd ✓ | CKF          | W           | 08/25/99    | <1.0   | <1.0             | <2.0           | <1.0             | <2.0             | <2.0           | <1.0             | <1.0           | ND               | <2.0          | <2.0    |
| 902.22.03      | Rainbow Creek ✓                    | GSF          | F           | 08/26/99    | <1.0   | <1.0             | <2.0           | <1.0             | <2.0             | <2.0           | <1.0             | <1.0           | ND               | <2.0          | <2.0    |
| 902.32.##      | Murrietta Cr/u/s Temecula Cr ✓     | BLB          | F           | 08/26/99    | <1.0   | <1.0             | <2.0           | <1.0             | <2.0             | <2.0           | 2.0              | <1.0           | 2.0              | <2.0          | <2.0    |
| 904.10.##      | Loma Alta Cr/College Blvd ✓        | GAM          | W           | 08/26/99    | <1.0   | <1.0             | <2.0           | <1.0             | <2.0             | <2.0           | 1.6              | <1.0           | 1.6              | <2.0          | <2.0    |

  

| Station Number | Dieldrin | o,p' DDD | p,p' DDD | o,p' DDE | p,p' DDE | o,p' DDT | p,p' DDT | p,p' DDMU | p,p' DDMS | Total DDT | Dicofol | Diazinon | Endo-sulfan I | Endo-sulfan II | Endo-sulfan Sulfate | Total Endo-sulfan | Endrin | Ethion |
|----------------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|-----------|---------|----------|---------------|----------------|---------------------|-------------------|--------|--------|
| 801.11.09      | 4.1      | 3.2      | 27.0     | <2.0     | 139.0    | <3.0     | <5.0     | 8.9       | NA        | 178.1     | NA      | <20.0    | <2.0          | NA             | NA                  | ND                | <2.0   | <6.0   |
| 801.11.89      | <2.0     | <2.0     | <2.0     | <2.0     | 22.8     | <3.0     | <5.0     | <3.0      | NA        | 22.8      | NA      | <20.0    | <2.0          | NA             | NA                  | ND                | <2.0   | <6.0   |
| 801.11.96      | 3.3      | 5.8      | 24.4     | 2.7      | 503.0    | <3.0     | <5.0     | 10.9      | NA        | 546.8     | NA      | <20.0    | <2.0          | NA             | NA                  | ND                | <2.0   | <6.0   |
| 801.11.96      | 3.4      | 5.8      | 25.8     | 2.8      | 516.0    | 3.1      | <5.0     | 11.4      | NA        | 564.9     | NA      | <20.0    | <2.0          | NA             | NA                  | ND                | <2.0   | <6.0   |
| 801.11.99      | <2.0     | <2.0     | 6.0      | <2.0     | 54.5     | <3.0     | <5.0     | 3.3       | NA        | 63.9      | NA      | <20.0    | <2.0          | NA             | NA                  | ND                | <2.0   | <6.0   |
| 901.12.##      | 8.8      | <2.0     | <2.0     | <2.0     | 9.4      | <3.0     | <5.0     | <3.0      | NA        | 9.4       | NA      | <20.0    | <2.0          | NA             | NA                  | ND                | <2.0   | <6.0   |
| 902.11.01      | <2.0     | 2.6      | 4.8      | <2.0     | 15.2     | <3.0     | <5.0     | <3.0      | NA        | 22.5      | NA      | <20.0    | <2.0          | NA             | NA                  | ND                | <2.0   | <6.0   |
| 902.22.03      | <2.0     | <2.0     | <2.0     | <2.0     | <2.0     | <3.0     | <5.0     | <3.0      | NA        | ND        | NA      | <20.0    | <2.0          | NA             | NA                  | ND                | <2.0   | <6.0   |
| 902.32.##      | <2.0     | <2.0     | <2.0     | <2.0     | 2.9      | <3.0     | <5.0     | <3.0      | NA        | 2.9       | NA      | <20.0    | <2.0          | NA             | NA                  | ND                | <2.0   | <6.0   |
| 904.10.##      | <2.0     | <2.0     | <2.0     | <2.0     | 7.6      | <3.0     | <5.0     | <3.0      | NA        | 7.6       | NA      | <20.0    | <2.0          | NA             | NA                  | ND                | <2.0   | <6.0   |

  

| Station Number | alpha-HCH | beta-HCH | delta-HCH | gamma-HCH (Lindane) | Total HCH | Hepta-chlor | Hepta-chlor-epoxide | Hexa-chloro-benzene | Methoxy-chlor | Oxa-diazon | Ethyl Para-thion | Methyl Para-thion | PCB 1248 | PCB 1254 | PCB 1260 | Total PCB | Toxaphene | Chemical Group A |
|----------------|-----------|----------|-----------|---------------------|-----------|-------------|---------------------|---------------------|---------------|------------|------------------|-------------------|----------|----------|----------|-----------|-----------|------------------|
| 801.11.09      | <1.0      | <2.0     | <2.0      | <1.0                | ND        | <2.0        | <1.0                | 0.7                 | <5.0          | 329.0      | <2.0             | <4.0              | <25.0    | 71.0     | 14.0     | 85.0      | 81.4      | 102.1            |
| 801.11.89      | <1.0      | <2.0     | <2.0      | <1.0                | ND        | <2.0        | <1.0                | <0.3                | <5.0          | <3.0       | <2.0             | <4.0              | <25.0    | 39.0     | <10.0    | 39.0      | <20.0     | ND               |
| 801.11.96      | <1.0      | <2.0     | <2.0      | <1.0                | ND        | <2.0        | <1.0                | 0.6                 | <5.0          | 59.6       | <2.0             | <4.0              | <25.0    | 26.0     | 15.0     | 41.0      | 72.0      | 94.6             |
| 801.11.96      | <1.0      | <2.0     | <2.0      | <1.0                | ND        | <2.0        | <1.0                | 0.6                 | <5.0          | 62.7       | <2.0             | <4.0              | <25.0    | 29.0     | 15.0     | 44.0      | 80.5      | 104.6            |
| 801.11.99      | <1.0      | <2.0     | <2.0      | <1.0                | ND        | <2.0        | <1.0                | <0.3                | <5.0          | <3.0       | <2.0             | <4.0              | <25.0    | 21.0     | <10.0    | 21.0      | <20.0     | 1.9              |
| 901.12.##      | <1.0      | <2.0     | <2.0      | <1.0                | ND        | <2.0        | 2.9                 | 0.4                 | <5.0          | 41.9       | <2.0             | <4.0              | <25.0    | 22.0     | <10.0    | 22.0      | <20.0     | 29.2             |
| 902.11.01      | <1.0      | <2.0     | <2.0      | <1.0                | ND        | <2.0        | <1.0                | <0.3                | <5.0          | 5.2        | <2.0             | <4.0              | <25.0    | <10.0    | <10.0    | ND        | <20.0     | ND               |
| 902.22.03      | <1.0      | <2.0     | <2.0      | <1.0                | ND        | <2.0        | <1.0                | <0.3                | <5.0          | <3.0       | <2.0             | <4.0              | <25.0    | <10.0    | <10.0    | ND        | <20.0     | ND               |
| 902.32.##      | <1.0      | <2.0     | <2.0      | <1.0                | ND        | <2.0        | <1.0                | <0.3                | <5.0          | <3.0       | <2.0             | <4.0              | <25.0    | <10.0    | <10.0    | ND        | <20.0     | 2.0              |
| 904.10.##      | <1.0      | <2.0     | <2.0      | <1.0                | ND        | <2.0        | <1.0                | <0.3                | <5.0          | 4.9        | <2.0             | <4.0              | <25.0    | 21.0     | <10.0    | 21.0      | <20.0     | 1.6              |

NA Means that the sample was not analyzed for the chemical.

ND Means that the chemical was not detected.

&lt; Means that the chemical was not detected above the indicated limit of detection.

F = Filet.

W = Whole Body.

Species codes are listed in Table 3.

**TABLE 2**  
**Toxic Substances Monitoring Program**  
**Preliminary Summary of 1999 Data: Organic Chemicals in Fish and Clams (ppb, wet weight)**

| Station Number | Station Name                    | Species Code | Tissue Type | Sample Date | Aldrin | alpha-Chlor-dene | cis-Chlor-dane | gamma-Chlor-dene | trans-Chlor-dane | cis-Nona-chlor | trans-Nona-chlor | Oxy-chlor-dane | Total Chlor-dane | Chlor-pyrifos | Dacthal |
|----------------|---------------------------------|--------------|-------------|-------------|--------|------------------|----------------|------------------|------------------|----------------|------------------|----------------|------------------|---------------|---------|
| 904.21.02      | Buena Vista Lagoon              | LMB          | F           | 08/25/99    | <1.0   | <1.0             | <2.0           | <1.0             | <2.0             | <2.0           | <1.0             | <1.0           | ND               | <2.0          | <2.0    |
| 904.31.##      | Agua Hedionda Cr/El Camino Real | GAM          | W           | 08/24/99    | <1.0   | <1.0             | <2.0           | <1.0             | <2.0             | <2.0           | 4.7              | 2.6            | 7.2              | <2.0          | <2.0    |
| 904.51.03      | San Marcos Cr                   | LMB          | F           | 08/24/99    | <1.0   | <1.0             | <2.0           | <1.0             | <2.0             | <2.0           | <1.0             | <1.0           | ND               | <2.0          | <2.0    |
| 904.61.07      | Escondido Cr/Elfin Forest Park  | GSF          | F           | 08/24/99    | <1.0   | <1.0             | <2.0           | <1.0             | <2.0             | <2.0           | <1.0             | <1.0           | ND               | <2.0          | <2.0    |
| 907.11.03      | San Diego R/u/s Taylor St.      | LMB          | F           | 08/23/99    | <1.0   | <1.0             | <2.0           | <1.0             | <2.0             | <2.0           | 3.0              | <1.0           | 3.0              | <2.0          | <2.0    |

  

| Station Number | Dieldrin | o,p' DDD | p,p' DDD | o,p' DDE | p,p' DDE | o,p' DDT | p,p' DDT | p,p' DDMU | p,p' DDMS | Total DDT | Dicofol | Diazinon | Endo-sulfan I | Endo-sulfan II | Endo-sulfan Sulfate | Total Endo-sulfan | Endrin | Ethion |
|----------------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|-----------|---------|----------|---------------|----------------|---------------------|-------------------|--------|--------|
| 904.21.02      | <2.0     | <2.0     | <2.0     | <2.0     | 2.2      | <3.0     | <5.0     | <3.0      | NA        | 2.2       | NA      | <20.0    | <2.0          | NA             | NA                  | ND                | <2.0   | <6.0   |
| 904.31.##      | <2.0     | <2.0     | 3.3      | <2.0     | 42.8     | <3.0     | <5.0     | <3.0      | NA        | 46.1      | NA      | <20.0    | <2.0          | NA             | NA                  | ND                | <2.0   | <6.0   |
| 904.51.03      | <2.0     | <2.0     | <2.0     | <2.0     | <2.0     | <3.0     | <5.0     | <3.0      | NA        | ND        | NA      | <20.0    | <2.0          | NA             | NA                  | ND                | <2.0   | <6.0   |
| 904.61.07      | <2.0     | <2.0     | <2.0     | <2.0     | <2.0     | <3.0     | <5.0     | <3.0      | NA        | ND        | NA      | <20.0    | <2.0          | NA             | NA                  | ND                | <2.0   | <6.0   |
| 907.11.03      | <2.0     | <2.0     | <2.0     | <2.0     | 4.8      | <3.0     | <5.0     | <3.0      | NA        | 4.8       | NA      | <20.0    | <2.0          | NA             | NA                  | ND                | <2.0   | <6.0   |

  

| Station Number | alpha-HCH | beta-HCH | delta-HCH | gamma-HCH (Lindane) | Total HCH | Hepta-chlor | Hepta-chlor-epoxide | Hexa-chloro-benzene | Methoxy-chlor | Oxa-diazon | Ethyl Para-thion | Methyl Para-thion | PCB 1248 | PCB 1254 | PCB 1260 | Total PCB | Toxaphene | Chemical Group A |
|----------------|-----------|----------|-----------|---------------------|-----------|-------------|---------------------|---------------------|---------------|------------|------------------|-------------------|----------|----------|----------|-----------|-----------|------------------|
| 904.21.02      | <1.0      | <2.0     | <2.0      | <1.0                | ND        | <2.0        | <1.0                | <0.3                | <5.0          | <3.0       | <2.0             | <4.0              | <25.0    | <10.0    | <10.0    | ND        | <20.0     | ND               |
| 904.31.##      | <1.0      | <2.0     | <2.0      | <1.0                | ND        | <2.0        | <1.0                | <0.3                | <5.0          | <3.0       | <2.0             | <4.0              | <25.0    | <10.0    | <10.0    | ND        | <20.0     | 7.2              |
| 904.51.03      | <1.0      | <2.0     | <2.0      | <1.0                | ND        | <2.0        | <1.0                | <0.3                | <5.0          | <3.0       | <2.0             | <4.0              | <25.0    | <10.0    | <10.0    | ND        | <20.0     | ND               |
| 904.61.07      | <1.0      | <2.0     | <2.0      | <1.0                | ND        | <2.0        | <1.0                | <0.3                | <5.0          | <3.0       | <2.0             | <4.0              | <25.0    | <10.0    | <10.0    | ND        | <20.0     | ND               |
| 907.11.03      | <1.0      | <2.0     | <2.0      | <1.0                | ND        | <2.0        | <1.0                | <0.3                | <5.0          | <3.0       | <2.0             | <4.0              | <25.0    | 18.0     | <10.0    | 18.0      | <20.0     | 3.0              |

NA Means that the sample was not analyzed for the chemical.

ND Means that the chemical was not detected.

&lt; Means that the chemical was not detected above the indicated limit of detection.

F = Filet.

W = Whole Body.

Species codes are listed in Table 3.



**TABLE 3**  
 Toxic Substances Monitoring Program  
 1999 Species Code List

**Freshwater Fish \***

| Species Code | Common Name            | Species Name                     | Family Name    |
|--------------|------------------------|----------------------------------|----------------|
| AC           | Arroyo Chub            | <i>Gila orcutti</i>              | Cyprinidae     |
| BB           | Brown Bullhead         | <i>Ameiurus nebulosus</i>        | Ictaluridae    |
| BCR          | Black Crappie          | <i>Pomoxis nigromaculatus</i>    | Centrarchidae  |
| BG           | Bluegill               | <i>Lepomis macrochirus</i>       | Centrarchidae  |
| BK           | Brook Trout            | <i>Salvelinus fontinalis</i>     | Salmonidae     |
| BLB          | Black Bullhead         | <i>Ameiurus melas</i>            | Ictaluridae    |
| BN           | Brown Trout            | <i>Salmo trutta</i>              | Salmonidae     |
| CCF          | Channel Catfish        | <i>Ictalurus punctatus</i>       | Ictaluridae    |
| CP           | Carp                   | <i>Cyprinus carpio</i>           | Cyprinidae     |
| GAM          | Mosquitofish           | <i>Gambusia affinis</i>          | Poeciliidae    |
| GSF          | Green Sunfish          | <i>Lepomis cyanellus</i>         | Centrarchidae  |
| LMB          | Largemouth Bass        | <i>Micropterus salmoides</i>     | Centrarchidae  |
| PCP          | Prickly Sculpin        | <i>Cottus asper</i>              | Cottidae       |
| PRS          | Red Shiner             | <i>Cyprinella lutrensis</i>      | Cyprinidae     |
| RBT          | Rainbow Trout          | <i>Oncorhynchus mykiss</i>       | Salmonidae     |
| RCH          | California Roach       | <i>Hesperoleucus symmetricus</i> | Cyprinidae     |
| SKR          | Sucker                 | <i>Catostomus sp.</i>            | Catostomidae   |
| SPM          | Sacramento Pike Minnow | <i>Ptychocheilus grandis</i>     | Cyprinidae     |
| STB          | Threespine Stickleback | <i>Gasterosteus aculeatus</i>    | Gasterosteidae |
| TL           | Tilapia                | <i>Tilapia sp.</i>               | Cichlidae      |

**Marine Fish \***

| Species Code | Common Name          | Species Name                  | Family Name     |
|--------------|----------------------|-------------------------------|-----------------|
| CKF          | California Killifish | <i>Fundulus parvipinnis</i>   | Cyprinodontidae |
| ORC          | Orangemouth Corvina  | <i>Cynoscion xanthulus</i>    | Sciaenidae      |
| SSP          | Shiner Perch         | <i>Cymatogaster aggregata</i> | Embiotocidae    |
| STF          | Starry Flounder      | <i>Platichthys stellatus</i>  | Pleuronectidae  |
| YFC          | Yellowfin Croaker    | <i>Umbrina roncador</i>       | Sciaenidae      |

**Non-Fish**

| Species Code | Common Name               | Species Name                | Family Name  |
|--------------|---------------------------|-----------------------------|--------------|
| TFC          | Asiatic Clam (transplant) | <i>Corbicula manilensis</i> | Corbiculidae |

\* Common and scientific fish names were obtained from Robins, C.R., R.M. Bailey, C.E. Bond, J.R. Brooker, E.A. Lachner, R.N. Lea, and W.B. Scott. 1991. Common and Scientific Names of Fishes from the United States and Canada. American Fisheries Society Special Publication 20, Bethesda, Maryland.



A WATER QUALITY INVENTORY SERIES  
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