3.0 RESULTS

This section presents the results of the MNR sampling program, including collection of sediment cores, generation of sediment samples, collection of water samples, collection of fish, and results of laboratory tests on samples of sediment, water, and fish tissue.

3.1 SEDIMENT

3.1.1 Core Retrieval

Daily cruises for core collection were conducted on October 15-17, 21-23, and 28-29, 2013. Appendix E includes cruise notes and video recordings of the coring drops. Primary and replicate cores were collected as planned (Sections 2.1.1 and 2.1.2). Horizontal accuracy was +/- 3 m, and the actual sediment core locations were within 30 m of target locations. The coring crew experienced one bad weather day (heavy winds, high seas) on October 28, 2013; otherwise, core retrieval operations went as planned.

Core retrieval was difficult at location BA10C on the 70-m isobath, where three drops of the coring device resulted in lack of recovery (likely due to rocky substrate); one drop of the coring device resulted in the liner coming off; and a satisfactory core 25 cm in length was retrieved on the fifth drop. At BA2B on the 150-m isobath and BA2DC on the 40-m isobath, two drops were required to obtain a satisfactory core. At BA3DC on the 30-m isobath, three drops were made to obtain a satisfactory core. At OA24 on the 70-m isobath, five drops were made to obtain a usable core. At several locations, damage to the coring device or the liners in the coring device occurred during the operation, requiring additional drops. For the eight days of core collection, the daily coring success rates (defined as the number of usable retrieved cores divided by the number of drops) were 86, 94, 63, 48, 47, 73, 100, and 75%. Tables 3-1 and 3-2 present coordinates of the cores collected for the shelf-wide area and OA, respectively.

Table 3-3 presents the lengths of the sediment cores collected. The maximum core length was 86 cm at location BA4DC (offshore of Portuguese Bend). Other cores with lengths of 80 cm or more were retrieved at location BA5DC (also offshore of Portuguese Bend), and at locations OA05, OA08, and OA11 (near the Sanitation Districts' outfall diffusers). The overall average length of successfully retrieved cores was approximately 53 cm. Average core lengths along individual isobaths were as follows: 56 cm for the 40-m isobath; 70 cm for the 60-m isobath; 32

cm for the 100-m isobath; and 50 cm for the 150-m isobath. For the 10 locations where replicates were collected, ratios of primary core lengths to replicate core lengths varied from 1.5:1 (BA2B) to 1:0.8 (OA16).

3.1.2 Generation of Sediment Samples

Cores were cut into slices at JWPCP during two separate events, one event occurring from November 18-22, 2013, and another event conducted from December 9-11, 2013. Core cutting was conducted by Sanitation Districts' staff at the WQL at JWPCP. Each slice had an approximate thickness of 2 cm. Cuts were made until the bottom remaining material was less than 2 cm in thickness, and any remainder was discarded. A total of 2,084 sediment slices was generated from the sediment cores collected during the 2013 sampling event.

3.1.3 Results of Physical Tests – Sediment

As described previously, GMU composited sediment samples before conducting physical tests. A total of 1,215 samples was generated. Sample counts were as follows: 516 samples were generated for the shelf-wide cores; 44 samples were generated for the shelf-wide replicate cores; 540 samples were generated for the OA cores; and 111 samples were generated for the OA replicate cores.

3.1.3.1 Grain Size

Values of percent retained and cumulative percent retained were reported for standard sieve and hydrometer tests, along with corresponding phi scale values based on the Wentworth Classification System. The phi scale is a base-two logarithmic scale with the negative exponent of the grain size in millimeters (mm). Table 3-4 presents grain-size data for cores along the 60-m isobath, where the highest COC concentrations typically are centered (Lee, H.J., 1994). Cores collected northwest of the outfalls had lower average sand content and higher average clay content than cores collected southeast of the outfalls. Summary tables of grain size test results for shelf-wide and OA samples are provided in Appendices F and G, respectively.

3.1.3.2 Bulk Density, Moisture Content, and Specific Gravity

Appendices H and I present tables showing values of BD_w and SG (as reported from the geotechnical laboratory) and MC values (as reported from the chemistry laboratory) for the shelf-wide and OA samples, respectively. The SG value is the ratio of the density of the dry-

solids fraction of the sample to the density of water. The tables also report computed values of BD_d, calculated as follows:

$$BD_d = \frac{BD_w}{1+W}$$

where:

BD_d = dry bulk density of the sediment in grams per cubic centimeter (g/cm^3)
BD_W = wet bulk density of the sediment in g/cm^3
W = fractional moisture content (non-dimensional)

Ranges of values in single samples were as follows:

- MC values ranged from about 16% in core BA6B (located on the 150-m isobath, in the 44-48-cm bed-depth interval), to about 78% in core BA4B (on the 150-m isobath, in the 8-12-cm interval).
- BD_d values ranged from 0.62 g/cm3 in core BA8C (located on the 70-m isobath near the Sanitation Districts' outfall diffusers, in the 16-20-cm bed-depth interval), to 1.6 g/cm3 in core BA6B (on the 150-m isobath, in the 44-48-cm bed-depth interval).
- SG values ranged from 2.05 in core BA8C (located on the 60-m isobath, in the 20-24-cm bed-depth interval), to 2.86 in core OA18 (on the 90-m isobath, in the 2-4-cm bed-depth interval).

For the 0-8-cm interval, average values over all cores were 39% for MC, 1.06 g/cm^3 for BD_d, and 2.68 for SG. For the core intervals below 8 cm, the average values were 37% for MC, 1.14 g/cm^3 for BD_d, and 2.66 for SG. MC testing was not possible for BA10C for the 0-2-cm interval due to insufficient sample volume; thus, the BD_d value was not calculated for this sample.

3.1.4 Results of Chemistry Tests – Sediment

Appendices J and K present test results for TOC and DDT analyses of samples derived from the shelf-wide and OA cores, respectively. Appendices L and M present the results for PCB tests for the shelf-wide and OA samples, respectively. Appendix N includes the complete reports from the analytical laboratory.

3.1.4.1 Total Organic Carbon

Reported values of TOC for single samples ranged from 0.54% in core BA10C (located on the 60-m isobath southeast of the Sanitation Districts' diffusers, in the 16-20-cm bed depth interval), to 19% in core BA8C (on the 60-m isobath, in the 16-20-cm interval). Table 3-4 lists the TOC

values for cores collected along the 60-m isobath. Values generally were higher for cores northwest of the Sanitation Districts' outfalls than for cores southeast of the outfalls.

Coefficients of determination (R^2) were calculated using Microsoft Excel for TOC concentrations versus concentrations of Total DDT Compounds, and TOC concentrations versus Total PCBs (expanded list). The results showed good (albeit non-linear) correlations with concentrations of Total DDT Compounds ($R^2 = 0.73$) and with Total PCBs ($R^2 = 0.79$). (An R^2 value of 1.00 indicates a strong correlation; a value of 0 indicates no correlation.) Appendix O includes graphic representations of these correlations.

3.1.4.2 DDTs in Sediment

Results of individual DDT analytes were organized into the two DDT groupings (summations) listed below (see Appendices J and K).

- Total DDTs is the summation of the o,p'- and p,p'- isomers of DDD, DDE, and DDT.
- Total DDT Compounds is the summation of Total DDTs plus p,p'-DDMU and p,p'-DDNU.

One DDT form was detected in at least one sample from every core, and at least one DDT form was detected in every sample from 36 out of 37 shelf-wide cores and in all 35 OA cores. Values of Total DDT Compounds for a single sample ranged from 1.1 ug/kg in core BA5BR (located on the 150-m isobath, in the 56-60-cm bed-depth interval) to 350,000 ug/kg in core BA8C (on the 60-m isobath, in the 16-20 cm interval). The most prevalent DDT compounds – both in terms of the number of detections and the magnitude of concentrations – were p,p'-DDE and p,p'-DDMU. For the entire sediment data set, concentrations of p,p'-DDE showed moderate correlation with concentrations of p,p'-DDMU ($R^2 = 0.65$; see Appendix O). The parent compound DDT was reported only at low relative concentrations. Table 3-5 shows average concentrations of the DDT groupings in the 0-8-cm bed-depth interval of each core. Figure 3-1 is an interpretive rendering of these average concentrations of Total DDTs in the 0-8-cm bed-depth interval. Figure 3-2 shows an exaggerated vertical profile of interpretive DDTs along the 60-m isobath, where the diffuser portions of the 90-inch and 120-inch outfalls (the outfalls that Sanitation Districts typically operates) are located, and where contaminant concentrations in sediment are highest.

3.1.4.3 PCBs in Sediment

Results for individual PCB congeners were summarized into two groups: Total PCBs – short list (the congener list previously used for the 2009 sediment data set), and Total PCBs – expanded list (see Appendices L and M). At least one PCB congener was detected in at least one sample from every core collected. Reported detections of Total PCBs in single samples ranged from 0.14 ug/kg in core BA5B (located on the 150-m isobath, in the 52-56-cm bed-depth interval) to 17,000 ug/kg in core BA8C (on the 60-m isobath, in the 32-36-cm interval). PCBs were not detected at the deepest intervals in the 23 cores with at least one sample interval with no detections; for the other 44 cores, PCBs were detected in samples generated from every bed-depth interval in the core. Table 3-6 shows average concentrations of Total PCBs in the 0-8-cm bed-depth interval of each core. Figure 3-3 shows interpretive concentration contours of the average concentrations of Total PCBs (short list) for the 0-8-cm interval without OC-normalization. The bottom half of Figure 3-4 shows a cross section of the sediment bed showing Total PCBs (short list) along the 60-m isobaths for the 2013 data set, again without OC normalization. Figures 3-5 and 3-6 are corresponding figures using the expanded list of Total PCBs.

3.1.5 OC Normalization of DDTs and PCBs

EPA's interim remedy in the IROD is based on contaminant concentrations in sediment after normalization for OC (EPA, 2009b). Researchers have reported that the toxicity of nonionic organic chemicals (such as DDTs and PCBs) in sediment appears to correlate well with concentrations of contaminants in the sediment OC fraction, but does not correlate well with the overall dry weight concentrations of the chemicals, i.e., the bioavailability of contaminants is related to the OC fraction (DiToro et al., 1991; Michelsen, T.C., 1992). For these reasons, similar to the 2009 sediment data processing, calculations were performed on the 2013 sediment laboratory data to provide normalization for OC, as follows:

$$\mu g / kg\, OC = \frac{\mu g / kg\ \ dry\ weight}{kg\, TOC / kg\ \ dry\ weight}$$

where:

µg/kg OC	=	micrograms of the chemical per kilogram of organic carbon
µg/kg dry weight	=	micrograms of the chemical per kilogram of dry weight sample
kg TOC/kg dry weight	=	percent TOC in dry weight sample expressed as a decimal,

e.g., 1% TOC = 0.01

For example:

$$\frac{650\ \mu g\ Total\ DDTs / kg\ \ dry\ weight}{0.01\ kg\ TOC / kg\ \ dry\ weight}$$

$$= 65{,}000\ \mu g\ Total\ DDTs / kg\ OC$$

Table 3-5 shows the OC normalized average concentrations of the DDT groupings in the 0-8-cm bed-depth interval of each core. Table 3-6 shows normalized concentration of PCBs.

3.1.6 Results of Geostatistical Modeling – Sediment Data

All chemical results were entered into ARC-GIS and MVS software. The software packages were used to generate concentration contour plots and to calculate characteristics of the EA sediment bed, including mass of COCs. The computational approach used by the MVS model is described below.

- In the model input, the value for the horizontal-to-vertical (H:V) anisotropy was set to 20,000.
- The 2013 sediment data set was used to extrapolate values of BD_d and COC concentrations at each of the 2.3 million individual cells. The MVS model used a computational approach called cell averaging.
- The model calculated a mass inventory volume (MIV) for each cell by multiplying the BD_d value by the COC concentration. Eight DDT analytes were calculated individually; the PCB congeners were grouped into a summation (Total PCBs) and then multiplied by the BD_d.
- The model extrapolated these MIV values to generate an MIV for each cell node.
- The nodal MIVs were summed.
- The respective summations were divided by the number of nodes to attain average MIV values.
- The average MIV values were then multiplied by the modeled volume to produce the total mass.

Table 3-7 lists the average values of contaminants across the EA bed, and includes estimates in the 0-8-cm bed-depth interval. Table 3-8 lists the estimates of contaminant mass. As previously mentioned, a report with full details of the MVS modeling effort and output is included in Appendix C.

3.2 WATER RESULTS

3.2.1 Grab Sampling Events

Grab samples of the water column were collected during three field deployments in 2015. In developing an optimal approach for collecting water samples at depth, a pilot test was conducted in March 2015 by staff from Kinnetic Laboratories, Inc., Carlsbad, California, and the Sanitation Districts' *Ocean Sentinel*. The pilot test assessed the feasibility of collecting a water sample directly into a 2.5-L sample bottle. Several samples were successfully collected during this cruise. A second sampling cruise was conducted from September 15 through September 25, 2015. A third cruise on November 30, 2015, was conducted using Kinnetic's 10-m RV *D.W. Hood*. This cruise was successful in re-collecting sample BA6DC-WO20-1115-1 (the original sample bottle had been broken during transport).

Sixty-nine primary water samples were collected from three depths at 23 sampling locations, and 68 water samples were also collected from four depths at 17 sampling locations where PSD samples had been collected previously. A total of 137 primary samples, 11 field replicates, and three equipment rinsate samples was collected and submitted to ALS for high resolution analyses.

During each sampler deployment, the boat propellers were stopped for variable amounts of time depending on the location and position of the wire cable and sampler trip rope, to avoid tangling the sampling gear. Without propulsion, the boats may have drifted, leading to possible positioning variances estimated to be as much as two boat lengths (i.e., 40 m for the Sanitation Districts' *Ocean Sentinel*, and 20 m for Kinnetic's *D.W. Hood*). Table 3-9 summarizes the grab sample collection data. Appendix P contains cruise notes and field notes. Videos of the sample collection are also included.

3.2.2 DDTs in the Water Column

Appendix Q presents tables of DDT test results organized by grid transect. Detected results for DDT analytes in water were reported by the testing laboratory in ng/L using three significant figures. As was done for sediment data, results for individual DDT analytes were organized into summations of Total DDTs and Total DDT Compounds. Non-detects were assigned values of zero in calculating the summations. The summations are included in Appendix Q.

Figures 3-6 and 3-7 present concentrations of p,p'-DDE for the water column at each sample location for the western and eastern sectors of the sampling area, respectively. Contaminant concentrations are shown in relation to vertical distance in the water column above the ocean bottom for each sample. Figures 3-8 and 3-9 show concentrations of Total DDTs in the same manner. Tables 3-10, 3-11, and 3-12 show results for Total DDT Compounds (all DDT forms combined) along the 150-m, 60-m, and 40-m isobaths, respectively; sample locations were grouped by distance relative to the Sanitation Districts' outfall diffusers.

A DDT isomer was detected in at least one sample collected at each location. All eight DDT isomers were reported in one sample (BA5DC-WO38-0915-1, a mid-column sample down-current of the outfall diffusers). The DDT compound most frequently detected was p,p'-DDE, and in the clear majority of samples, this compound and p,p'-DDMU were detected at concentrations far exceeding all other DDT forms. The water data set showed fairly strong correlation between concentrations of p,p'-DDE and p,p'-DDMU ($R^2 = 0.82$; see Appendix O).

The highest concentrations were found in BA4C-WO58-0915-1 (a near-bottom sample down-current [northwest] from the outfall diffusers), with maximum p,p'-DDE and p,p'-DDMU concentrations reported at 1.14 ng/L and 1.48 ng/L, respectively; the corresponding values for Total DDTs and Total DDT Compounds were 1.59 ng/L and 3.26 ng/L. The forms o,p'- and p,p'-DDT were rarely detected in any sample. For the T11 reference location (up-current [southeast] of the outfall diffusers), p,p'-DDE was reported at 0.0308 ng/L in sample T11-WO30-0915-1 (collection depth at 30 m); no other DDT forms were detected in any samples collected at T11.

3.2.3 PCBs in the Water Column

Appendix R presents tables of PCB test results organized by the shore-normal transects. Detected results for PCBs in water were reported by the testing laboratory in picograms per liter (pg/L) using three significant figures. Results for individual PCB congeners were added into summations of Total PCBs, with non-detects assigned a value of zero. The summations are shown in Appendix R.

Figures 3-10 and 3-11 present concentrations of Total PCBs for the water column at each sample location for the western and eastern sectors of the sampling area, respectively. Contaminant

concentrations are shown in relation to vertical distance in the water column from the ocean floor for each sample. Tables 3-13, 3-14, and 3-15 show results for Total PCBs along the 150-m, 60-m, and 40-m isobaths, respectively; the nodes were grouped by distance relative to the Sanitation Districts' outfall diffusers.

At least two PCB congeners were detected in every water sample, and all 46 congeners were detected at least once. The maximum value of Total PCBs was 190 pg/L in sample BA7C-WO30-0315-1 (a mid-column sample in the vicinity of the outfall diffusers). Another relatively high result for Total PCBs (170 pg/L) was detected in sample BA4C-WO58 (a near-bottom sample down-current of the outfall diffusers). The minimum value for Total PCBs was 0.33 pg/L in mid-column sample BA10B-WO75-0915-1, collected at a depth of 75 m; the 5-m sample at the same location (BA10B-WO5-0915-1) had a Total PCBs result of 0.35 pg/L. Location BA10 is up-current of the outfall diffusers.

The maximum concentration for a PCB target analyte was 26.2 pg/L for PCB 8. The twelve dioxin-like PCB congeners were detected infrequently. Of these twelve congeners, PCB 126 was detected in three samples, all from location BA7C, in the vicinity of the outfall diffusers. The highest concentration of PCB 126 (1.16 pg/L) was detected in near-bottom sample BA7C-WO55-0315-1. The result for PCB 209 (5.23 pg/L), reported in the mid-column sample collected at reference location T11, is an anomalously high result; it was exceeded only by the result for a near-bottom sample collected at location BA7C at 91 m (5.36 pg/L). The few other low-level detections of PCB congeners in samples collected at T11 appear representative of background ocean water conditions.

3.3 FISH RESULTS

3.3.1 Collections and Laboratory Analysis

Fish collections took place between June 2014 and August 2016. Fish were caught by Sanitation Districts' staff from their RV *Ocean Sentinel*, and by Seaventures Inc., staff on their vessel *Early Bird II*. Collection methods included hook and line, spear fishing, traps, and trawls. Coordinates for each fish caught, with catch date and time, are presented in Table 3-16. Appendix T includes cruise reports and records of fish collections. Fish weight, standard fish length, and total fish length are also indicated.

Fish specimens were transported under chain-of-custody protocol to Vista for testing of chemistry parameters. Vista stored all fish specimens in a freezer at -20° C prior to sample processing. Vista prepared 301 primary fish tissue samples (skin-off filets) and 16 replicate samples. These were analyzed for COCs using HRGC/HRMS methods, and for lipids using the Bligh-Dyer method.

3.3.2 DDTs in Fish Tissue

Appendix U presents tables of DDT test results organized by fish collection area. Detected results for DDT analytes in fish tissue were reported by the testing laboratory in picograms per gram (pg/g) using three significant figures. Results of individual DDT analytes were organized into summations of Total DDTs and Total DDT Compounds. Non-detects were assigned values of the sample-specific estimated detection limit (EDL) in calculating the summations. This approach is consistent with EPA's ICs program at PV Shelf.

Tables 3-17 and 3-18 show the calculated values for Total DDTs and Total DDT Compounds, respectively, in fish samples, in units of ug/kg (parts per billion [ppb]). Values are given by collection area and for each fish species. Figure 3-12 shows maxima, minima, and average values of Total DDTs by collection area.

3.3.2.1 DDTs in Barred Sand Bass

All eight DDT forms were detected in BSB fish tissue, but o,p'-DDT (11 of 143 samples) and o,p'-DDD (three of 143 samples) were rarely detected (Appendix U). Total DDT results (Table 3-17) show that both the maximum value for a single BSB (701,000 pg/g in sample Z1BSB-2014-28) and the highest average (mean) value for any collection area were reported for samples of fish caught at Zone 1 (near the Sanitation Districts' outfall diffusers). For the BSB data set, p,p'-DDE, o,p'-DDE, and p,p'-DDMU were detected in all samples, and the highest results were for p,p'-DDE and p,p'-DDMU. The BSB data set also showed strong correlation between detected pair concentrations of p,p'-DDE and p,p'-DDMU ($R^2 = 0.84$; see Appendix O). The minimum value of Total DDTs in a BSB sample was 8,770 pg/g in sample RFBSB-2016-09 from Redondo Flats. When examining Total DDTs and Total DDT Compounds in BSB by collection area (Table 3-17 and Table 3-18, respectively), Zone 1 had the highest maximum and average values.

3.3.2.2 DDTs in White Croaker

All eight DDT forms were detected in WC fish tissue, but o,p'-DDT was rarely detected (4 of 158 samples; Appendix U). The DDT isomers p,p'-DDE, o,p'-DDE, and p,p'-DDD were detected in all samples from all collection areas including Ventura Flats, the reference area for WC. The isomer p,p'-DDT was detected in at least one fish from each collection area. All concentrations of individual DDT forms above 1,000,000 pg/g were for p,p'-DDE (maxima of 2,010,000 pg/g in sample Z1WC-2014-19 [from Zone 1] and 1,860,000 pg/g in sample Z2WC-2014-15 [from Zone 2]). For the WC data set, p,p'-DDE and o,p'-DDE were detected in all samples; p,p'-DDMU was detected in all samples except for 10 fish from the Ventura Flats reference area; and the highest results were for p,p'-DDE and p,p'-DDMU. Similar to that of BSB, the WC data set showed strong correlation between p,p'-DDE and p,p'-DDMU ($R^2 = 0.84$; see Appendix O). The maximum value of Total DDTs in a WC sample was 2,360,000 pg/g in sample Z1WC-2014-19 from Zone 1. The minimum Total DDTs result was 4,490 pg/g in sample VFWC-2015-19 from Ventura Flats. When examining Total DDTs by collection area (Table 3-17), Zone 1 and Zone 2 were nearly identical for maximum and average concentrations. When examining Total DDT Compounds (Table 3-18), Zone 1 had the greatest maximum value for a single sample; Zone 1 and Zone 2 had nearly identical average values.

3.3.3 PCBs in Fish Tissue

Appendix V presents tables of PCB test results organized by fish collection area. Detected results for PCB congeners in fish tissue were reported by the testing laboratory in pg/g using three significant figures. Results of individual PCB congeners were added into summations of Total PCBs, and consistent with EPA's ICs program, non-detects were assigned values of the sample-specific EDL. Table 3-19 shows the calculated values for Total PCBs in fish samples, expressed in units of ug/kg, for ease of comparison to IROD cleanup goals. Values are given by collection area and for each fish species. Figure 3-12 shows maxima, minima, and average values of Total PCBs by collection area.

3.3.3.1 PCBs in Barred Sand Bass

All 46 target PCB congeners were detected in at least one fish sample from each collection area, including the BSB reference area at Huntington Flats. Maximum calculated values for Total PCBs (Table 3-19) were 171,000 pg/g in sample HFBSB-2016-13, and 164,000 pg/g in sample

HFBSB-2016-19, both from the Huntington Flats collection area. The minimum value for Total PCBs in any single sample was 3,770 pg/g in BSB sample Z2BSB-2014-12 from Zone 2. The twelve dioxin-like PCB congeners were consistently detected, albeit at low concentrations; of these twelve congeners, PCB 126 was detected at a maximum concentration of 58.1 pg/g in a sample from Huntington Flats (HFBSB-2016-13; Appendix V). When examining Total PCBs in BSB by collection area (Table 3-19), Huntington Flats had the highest maximum and average values (see discussion in Section 4.3.2).

3.3.3.2 PCBs in White Croaker

All 46 target PCB congeners were detected in at least one fish sample from each collection area, except for PCB 169, which was not reported in samples from the WC reference area at Ventura Flats. The maximum concentration for a PCB target congener was 35,300 pg/g for PCB 153 in sample Z2WC-2014-18, but care must be taken when assessing the maximum individual PCB data, due to the potential addition of non-target PCB co-elutes. The twelve dioxin-like PCB congeners were consistently detected at low concentrations. Maximum values for Total PCBs were 256,000 pg/g in sample Z2WC-2014-18 and 225,000 pg/g in sample Z2WC-2014-15, both from Zone 2. Like the DDT results for WC, the maximum Total PCBs concentrations occurred in Zones 1 and 2. The minimum value for Total PCBs was 1,340 pg/g in sample VFWC-2015-03 from Ventura Flats. When examining Total PCBs in WC by collection area (Table 3-19), Zone 2 had the greatest maximum and average values.

3.3.4 Total Lipids in Fish Tissue

Reported values of total lipids ranged from 0.539% to 4.52% in BSB, and from 0.931% to 6.06% in WC. These low levels of lipids in skin-off filets were expected and are consistent with previous lipids data from the Sanitation Districts. Lipid normalization was not performed on this contaminant data set, and no further lipids data evaluation was made. The percent-lipids results for each fish are presented in the DDT results tables in Appendix U. Appendix W includes the complete reports from the analytical laboratory.