

Table 4-6 – Comparison of DDTs in Fish
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

	BSB									WC											
Sampling event	NOAA 2002-2004 (ND = 0)			Sanitation Districts 2012 (ND = 0)			EPA 2014-2016 (ND = EDL)			NOAA 2002-2004 (ND = 0)			EPA ICs 2009-2012 (ND = MDL)			Sanitation Districts 2015 (ND = 0)			EPA 2014-2016 (ND = EDL)		
Location	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max
Breakwater Area	60,700	202,000 (6)	402,000				22,200	75,350 (31)	247,000	17,300	251,000 (49)	2,900,000	14,800	127,000 (15)	267,000				57,000	284,000 (30)	622,000
Huntington Flats	124,000	124,000 (1)	124,000				10,700	93,400 (30)	543,000	35,600	104,000 (10)	188,000									
Redondo Flats	45,300	99,100 (10)	269,000				8,770	54,500 (26)	153,000	60,100	234,000 (25)	874,000							79,800	222,000 (8)	508,000
Ventura Flats										44,200	84,000 (9)	115,000	10,300	25,200 (4)	48,300				4,490	11,800 (30)	21,300
Zone 1	46,200	882,000 (16)	4,320,000		127,000 (10)		17,600	286,000 (30)	701,000	186,000	1,350,000 (16)	6,770,000					2,850,000 (10)		157,000	765,000 (30)	2,360,000
Zone 2					70,000 (10)		39,200	136,000 (12)	371,000	127,000	992,000 (29)	3,590,000					1,550,000 (10)		110,000	773,000 (30)	2,030,000
Zone 3	65,400	303,000 (5)	586,000		65,000 (10)		13,400	96,900 (14)	250,000								875,000 (10)		81,700	417,000 (30)	1,530,000

Abbreviations
Avg - Average
BSB - Barred sand bass
COCs - Chemicals of concern
DDD - Dichlorodiphenyldichloroethane
DDE - Dichlorodiphenyldichloroethene
DDT - Dichlorodiphenyltrichloroethane
EDL - Estimated detection limit (sample specific)
EPA - United States Environmental Protection Agency
ICs - Institutional Controls
IROD - Interim Record of Decision
JWPCP - Joint Water Pollution Control Plant
m - Meters
Max - Maximum
MDL - Method detection limit
Min - Minimum
MNR - Monitored natural recovery
NA - Not applicable
ND - Not detected
NOAA - National Oceanic and Atmospheric Administration
NPDES - National Pollutant Discharge Elimination System
o,p - Ortho or para position of chlorine on phenyl groups
SCCWRP - Southern California Coastal Water Research Project
WC - White croaker

Notes
1. Concentrations of DDTs are in units of **picograms per gram (pg/g = parts per trillion)**.
2. "DDTs" is the sum of six target DDT isomers (o,p'-DDD, o,p'-DDE, o,p'-DDT, p,p'-DDD, p,p'-DDE, and p,p'-DDT).
3. Numbers in parentheses are the numbers of fish results in each average calculation or composite.
4. NOAA 2002-2004 results are from fish caught at overlapping or adjacent locations: Segment 16 and EPA A (Breakwater Area); Segment 20 (Huntington Flats); Segments 6, 7, and EPA F (Redondo Flats); Segment 1 (Ventura Flats); Segments 12 and 13-14 (Zone 1); EPA E (Zone 2); and Segments 8 and 9 (Zone 3).
5. EPA 2014-2016 results are based on the current sampling program from the locations listed.
6. EPA ICs 2009-2012 results are from WC caught at adjacent pier locations: Long Beach Breakwall and Cabrillo Pier (Breakwater Area); and Santa Monica Pier (Ventura Flats reference area).
7. Sanitation Districts' 2012 results BSB and 2015 results for WC are from fish surveys typically conducted as part of JWPCP NPDES permit compliance. Those results are from analyses of composited samples of 10 fish specimens (one composite each from Zones 1, 2, and 3; Sanitation Districts, 2014, 2016).
8. Shaded cells show DDTs greater than the IROD human health goal for ingestion of WC (400 micrograms per kilogram = 400,000 pg/g).
9. EPA Zones 1, 2, and 3 are subareas within the boundaries of the respective Sanitation Districts' three Fish Tissue Bioaccumulation Zones used in the JWPCP NPDES compliance programs for fish. The EPA zones were located along the 60-m isobath, the depth of the outfall diffusers, the former source of release of COCs to the environment.

Sampling Events
NOAA 2002-2004 - Skin-off filet fish tissue results in *2002-2004 Southern California Coastal Marine Fish Contaminants Survey* (NOAA/EPA, 2007).
EPA ICs 2009-2012 - Institutional Controls program, skin-off filet results in *Technical Memoranda - Risk Evaluation of Fish Monitoring Results and Lobster Data* (Gilbane, 2016b), and *Human Health Risk Evaluation of 2011-2012 Fish Collection Data* (Gilbane, 2017), Palos Verdes Shelf.
Sanitation Districts 2012 - Skin-off filet results in *2012-2013 Joint Water Pollution Control Plant, Biennial Receiving Water Monitoring Report*, Table 7.3 2012 Local Seafood Safety Data Summary (Sanitation Districts, 2014).
Sanitation Districts 2015 - Skin-off filet results in *2014-2015 Joint Water Pollution Control Plant, Biennial Receiving Water Monitoring Report*, Appendix 7.17 2014-2015 Local Bioaccumulation Trends (Sanitation Districts, 2016).
EPA 2014-2016 - Skin-off filets for EPA's MNR event.