

South San Diego Bay – Evidence for Section 303(d) Listing

1998 LISTING DECISIONS

In 1998 the California Regional Water Quality Control Board, San Diego Region (Regional Board) did not recommend South San Diego Bay (near the power plant) for Section 303(d) listing. Evidence was brought to the Regional Board by the Environmental Health Coalition (EHC) of San Diego. EHC sought to have South San Diego Bay listed for heat, chlorine and turbidity that was causing a loss of halibut nursery habitat and large losses of benthic and marine organisms. The following is a list of the scientific studies that were submitted by EHC:

1. Merino, Jose-Maria, Ph.D. 1981. A Study of the Temperature Tolerances of Adult Solenostomus and Tagelus Californianus in South San Diego Bay: The Effects of Power Plant Cooling Water Discharge.
2. EHC citations for issues related to appeal of the SDGE South Bay Power Plant Order
3. EHC citations to the record documenting SDGE's deleterious impact on San Diego Bay and evidence that the needs of the beneficial uses are not currently being met.
4. Letter to Laura Hunter from Sharon Kramer of National Marine Fisheries Service.
5. Woods, Thomas. 1997. Term Paper for SDSU: The Biology, Use of Bays, and Temperature Tolerances of the California Halibut, Paralichthys californicus.
6. Kramer, Sharon Hendrix, Ph.D. 1990. Dissertation in Marine Biology at UCSD: Habitat Specificity and Ontogenetic Movements of Juvenile California Halibut, Paralichthys californicus, and Other Flatfish in Shallow Water of Southern California. Sharon H. Kramer.

This argues for EPL

In their "Response to Comments" the Regional Board states that the "Regional Board is not required to list waterbodies where attainment of water quality standards is expected to be accomplished through imposition of existing federal, state or local requirements. The federal, state or local requirements must be enforceable, applicable to the pollution problem, and stringent enough to lead to attainment of water quality standards. Discharges from the SDGE Power Plant site to the discharge channel are currently regulated by a NPDES permit. The NPDES permit conditions implement best available technology controls required by Clean Water Act Section 301a(b) and 306 and are sufficient to protect beneficial uses and result in the attainment of applicable water quality standards. The conditions of the NPDES permit are enforceable and compliance with the permit will result in attainment of applicable water quality standards in the discharge channel. If the NPDES permit conditions are not stringent enough to lead to attainment of water quality standards, then the appropriate remedy would be to modify the NPDES permit. Impaired waterbodies do not need to be included on the Section 303(d) list if an alternative regulatory mechanism would afford better water quality than a Total Maximum Daily Load (TMDL) process."

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+ 213*

New Information

New information submitted during the State Water Resource Control Boards (State Board) extension of the data submission deadline in support of the listing of South San Diego Bay in 2002 include:

1. Kramer, Sharon Hendrix. 1990. Distribution and Abundance of Juvenile California Halibut, Paralichthys californicus, in Shallow Waters of San Diego County.
2. Innis, David B. 1990. Juvenile California Halibut, Paralichthys Californicus, Growth in Relation to Thermal Effluent.
3. San Diego Bay Council. 2001. Deadly Power.

Paper #1 describes the size-specific distribution and abundance of juvenile California halibut in shallow waters of San Diego County in 1987 and 1988. The study looked at three bays; Mission Bay, Agua Hedionda and San Diego Bay. The study concluded that the most optimal habitat for juvenile halibut is bays.

Paper #2 describes a laboratory study on growth and mortality of wild-caught halibut in 1976. The study grew the fish for 259 days in flow-through aquariums. Two water types were used: ambient seawater and ambient seawater mixed with power plant effluent. The study concluded that halibut mortality can be correlated to temperature and that above 24°C, juvenile halibut are likely to avoid the water. This may lead to a decrease in suitable halibut habitat in enclosed bays near power plant effluent.

Paper #3 is a summary of many scientific papers and attempts to demonstrate that the South Bay Power Plant's effluent is deadly to aquatic organisms due to thermal and chemical pollution. It cites several sources that attest to the south bays unique and fragile ecosystem. It cites other papers that demonstrate the ecological assemblages to differ in the South Bay from other parts of San Diego Bay and that attest to the large number of microscopic plants and animals, juvenile life forms and adult fish that are killed by plant operations every year. It points to thermal pollution, impingement/entrainment, chlorine, copper and zinc as the suspected causes.

Current Studies Pursuant to 13267

As part of the renewal of the Power Plants NPDES Permit (No. CA0001368), Regional Board has requested Duke Energy to conduct more studies. The studies are as follows:

1. A study to address the ability of the area affected by the discharge to support a balanced indigenous population of fish, shellfish and wildlife. This will include measures of sediment and water column chemistry and toxicity, benthic community assemblages and temperature.
2. A study shall be conducted to characterize impingement and entrainment mortality.
3. A study will monitor the geographical extent, density and condition of eelgrass beds in South San Diego Bay.
4. The discharger will conduct a dissolved oxygen assessment to assist in the determination of an appropriate numerical site-specific water quality objective.
5. The discharger shall consult with USFWS to determine the goals and objectives of the South San Diego Bay National Wildlife Refuge and investigate the impact of the thermal discharge on these objectives.
6. A special sunset study may be required at the time of plant closure or major modification.

Other Outstanding Issues

1. Current Permit

It appears that the current permit only has effluent limitations for temperature. The current limit is that discharge water can be no more than 15C higher than intake water. The plant must comply with Sections 316(a) and 316(b) of the Clean Water Act. This needs to be double-checked with Industrial Compliance Unit Staff.

2. Clean Water Act Sections 316(a), 316(b) and 303(d)

What is the relationship between these three sections of the Clean Water Act? If Sections 316(a) and 316(b) are being met, does that remove the necessity of assessing the water body for Section 303(d) listing due to thermal pollution and impingement/entrainment mortality?

Cystal Taylor

Crosby Street Park – Evidence for Section 303(d) Listing

1998 LISTING DECISIONS

The 1998 Section 303(d) Listing Criteria developed by the California Regional Water Quality Control Board, San Diego Region (Regional Board) for Bay Protection Toxic Cleanup Program (BPTCP) Data in San Diego Bay required both elevated chemistries and evidence of degraded benthic communities. Sediment chemistry concentrations had to be elevated over the Effects Range Median (ERM) Summary Quotient and/or the Probable Effects Limit (PEL) Summary Quotient and/or individual chemistry elevated to 4x ERM or 5.9x PEL. The ERM Summary Quotient was 0.85 and the PEL Summary Quotient was 1.29. Designation of benthic habitat as “Degraded” was determined by the investigators of the BPTCP Study.

Two sites from the BPTCP Study (90018 and 93177) are adjacent to Crosby Park, but only site 93177 had analysis of sediment chemistry performed. The following summarizes the chemistry data from this site that was near or above the criteria established by the Regional Board in 1998.

	Total Chlordane (ppb)	Total DDT (ppb)	Low MW PAH (ppb)	Hi MW PAH (ppb)	Total PAH (ppb)
PEL	4.79	51.70	1442.00	6676.14	16770.51
5.9 x PEL	28.26	305.03	8507.80	39389.23	98946.01
ERM	6.00	46.10	3160.00	9600.00	44792.00
4 x ERM	24.00	184.40	12640.00	38400.00	179168.00
SITE					
93177	13.35	7.74	10117.40	26069.00	36186.40

	Summary ERM Quotient	PEL Quotient
SITE	0.85	1.29
93177	0.694	1.204

The Summary Quotients represent values higher than the 90% confidence interval. In the original BPTCP Study, 41 stations had quotients higher than these values, with 12 of the 41 being analyzed for benthic conditions. All 12 showed degraded benthic communities.

This site did contain a chemical constituent above the criteria as developed in 1998. Low Molecular Weight (MW) Polyaromatic Hydrocarbons (PAHs) concentrations were greater than the “5.9xPEL” criteria. Unfortunately, this site was only given low priority by the BPTCP Study and did not receive analysis of its benthic community. Therefore, this site does not qualify for inclusion on the Section 303(d) list under the criteria as developed in 1998 by the Regional Board.

NEW INFORMATION

To qualify for listing, new data must be presented that adds to the weight of evidence to show that San Diego Bay waters near Crosby Park are not meeting water quality standards. Two new sources of information have been made readily available to the Regional Board and can serve as evidence for Section 303(d) listing. This first is reference to a sediment study performed in 1988 and the second are a large packet of written testimonials on the value and condition of San Diego Bay near Crosby Park.

In preparing to build Crosby Park, the Port of San Diego contracted with Woodward-Clyde Consultants to conduct an analysis of the sediments and waters adjacent to the proposed park location. Nine sediment cores were taken and two were analyzed for bioaccumulative metals and chemicals in 1988. The results are presented below (these results only summarize the information presented to the Regional Board by the Environmental Health Coalition on 7 May 2002 and not the entire Woodward-Clyde Report).

	Mercury (ppm)	Copper (ppm)	Lead (ppm)	Chromium (ppm)
PEL	0.7	108.2	112.18	160.4
5.9 x PEL	4.13	638.38	661.862	946.36
ERM	0.7	270	218	370
4 x ERM	2.8	1080	872	1480
WCC Sample				
4-2	1.0	91.7	102.0	45.4
9-3	1.6	263.0	273.0	37.4

None of these results would qualify this site for the Section 303(d) list under the criteria as developed by the Regional Board for the 1998 listing.

Sixty-nine members of the community filled out a form that was created by the Environmental Health Coalition to demonstrate support for the Section 303(d) listing of San Diego Bay near Crosby Street Park and for South San Diego Bay near the Power Plant. The majority of the testimonials indicate the citizens desire to have clean water for fishing and swimming. Some indicate that they believe the waters to be contaminated and to have a foul odor. No data is presented and these letters must be considered as opinion. While the level of use of a particular water body is not a consideration for listing, the frequent use of these waters for fishing and swimming do increase the potential that impaired waters will impact human health.

Additionally, EHC purports this site to be posted against fishing and swimming. Additionally, the San Diego County Department of Environmental Health states that "Occasional consumers of San Diego Bay fish have little reason for concern. However, consumers who eat fish several times a week, or for those in sensitive populations (e.g. infants, pregnant or breastfeeding women) may have potential increased health risks. Although these risks are generally very small, the County recommends that these consumers call (619) 338-2222 for more information." This must be considered as additional evidence that San Diego Bay waters are not meeting Water Quality Standards.

Outstanding Issue

Issues of Environmental Justice may need to be addressed for this Section 303(d) listing. The neighborhoods surrounding Crosby Street Park are among the least affluent of the City. The site is adjacent to an urban park used by inter-city low income families. The large amount of public concern may elevate this issue to 303(d) listing. Historically, these issues have never been used as listing criteria, but have been used in the setting of TMDL priority rankings.