Exhibit 19

## **Demonstrative Exhibits Summary**

Evidence	Shipyard	SDG&E
COC Use	Substantial documented evidence	Substantial documented evidence
Environmental Pathways	Direct releases to/directly adjacent to Bay  Paint and sandblast material  Runoff  Waste disposal  Direct releases	Direct releases to Bay  ☐ Cooling water  Indirect/incomplete pathways ☐ Tidelands ponds ☐ CB-1 ☐ Substation runoff to Sampson St.
High Magnitude of COC Mass Releases	Substantial evidence	No evidence
Corresponding Sitespecific Chemistry Data	Strong evidence indicating shipyard source  Concentrations in source areas (shipways) higher than sediment  Logical concentration gradient leading to source areas  Chemical fingerprint match	Strong evidence indicating absence of source  Concentrations in source areas and along transport pathways lower than sediment  Lack of logical concentration gradient leading to source areas  Chemical fingerprint mis-match

 $\square$  = Evidence supporting condition of pollution or nuisance

#### Sandblast Material and Paint 1

- Marine railways
- Sandblasting and painting areas

## Fluids (functional fluids, oils, and dielectric fluids) <sup>2</sup>

- Equipment in marine railways and other locations such as machine shops located on piers (over water)
- Electrical infrastructure (transformers, liquid-filled cables)

#### Ship-related Sources<sup>3</sup>

- Ship solid materials released during repair in marine railways
- Ship bilge waters released in railways and adjacent to piers.
- Leaching of COCs from ship paints.
- Sandblasting and painting areas

Soil San Diego Bav Stormwater Discharge Via SW01-SW03 and SW05-SW08 & **Direct Discharge to** SW4

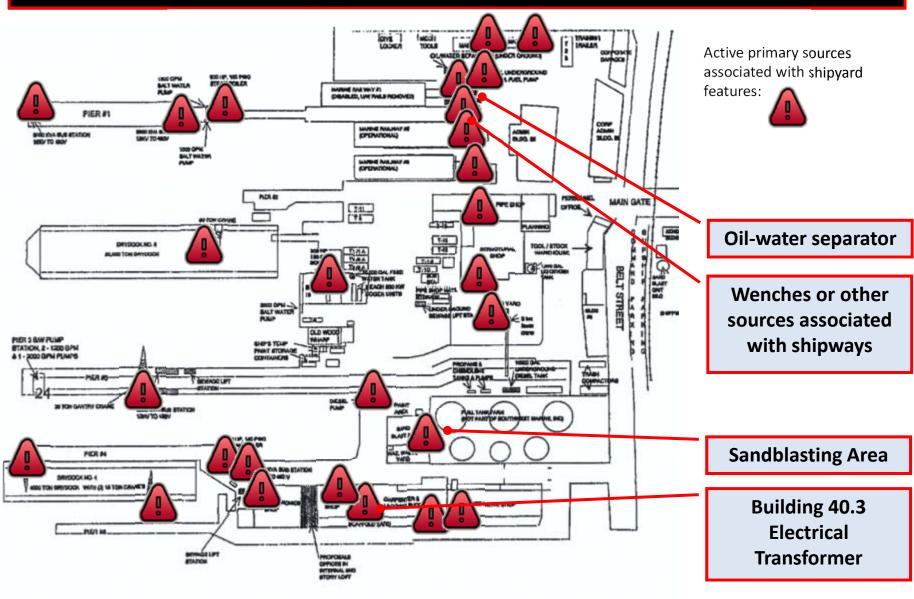
**COCs Associated with** 

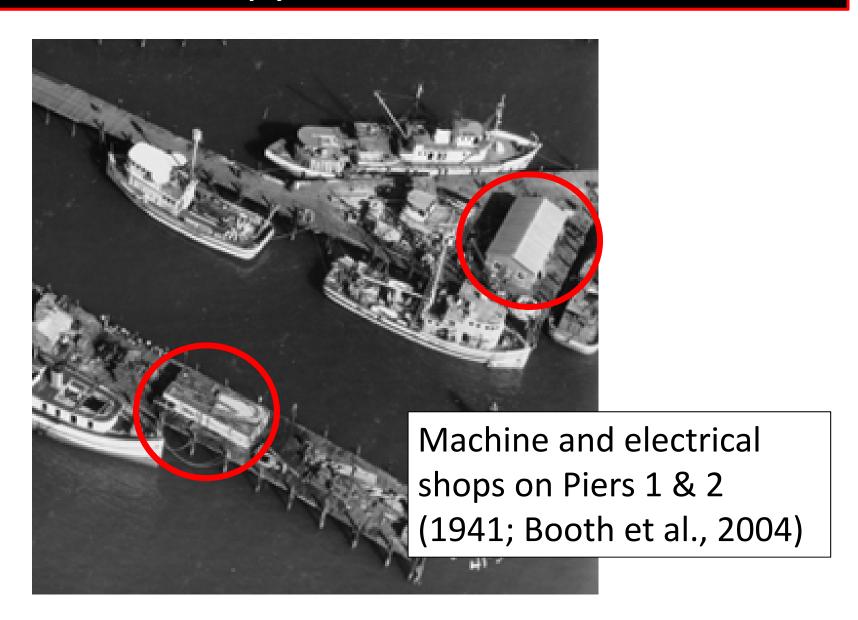
#### **Shipyard Sources:**

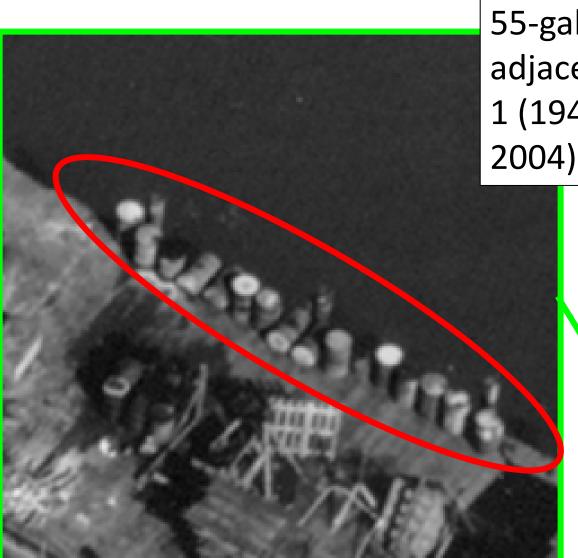
- 1.PCBs, TBT, Copper, and Mercury.
- 2.PCBs, HPAHs.
- 3.PCBs, TBT, Copper, Mercury, and HPAHs.
- 4.HPAHs.



<u>Creosote in Marine Piers and</u> <u>Structures <sup>4</sup></u>

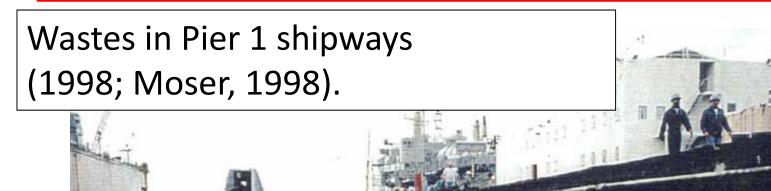






55-gallon drums located adjacent to water on Pier 1 (1941; Booth et al., 2004)





### Shipyard PCB Uses and Sources

	PCB Sources (OPEN system sources highlighted in yellow)				
Shipyard Features	Hydraulic Fluid	Cutting / Machine Oils	Dielectric Fluid	Paint and Sand- blasting	Shipbuilding and Repair Materials
Repair Stations on Shipways	•	•	•	•	•
Stormwater outfalls	•	•	•	•	•
Cranes, Winches, Pumps, and Hydraulics	•	•			
Boiler, Steam Sheds, and Compressors	•	•			
Electric Saw, Electric Shops, Electric Sheds, Electrical Parts and Storage, Machine Shops, Welding Shops	•	•	•		•
Paint Shop, Paint Storage				•	
General Storage, Warehouses, Storage Tanks	•	•	•	•	•
Lumber and Woodworking Sheds	•	•			
Transformers and electrical infrastructure			•		

Active primary sources associated with shipyard features: •

### Widespread Shipyard PCB Use in Marine Paint

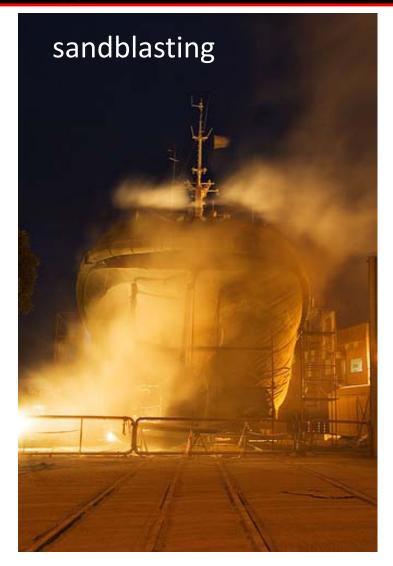
 1971 inventory of pervasive use of PCBs in shipyard marine paint in Southern California, including San Diego (Young and Heesen, 1974)



### **Shipyard Marine Paints**

Direct Releases of Paint to Shipyard Site Sediment

- Circa 1971, CRWQCB estimated that 5-10% of sandblasting material discharged to San Diego Shipyard Site, a mass of ~200-300 tons annually (CRWQCB, 1972)
- During spray painting of ships in San Diego shipyards, 5-30% of paint is lost to the environment (USEPA, 1974)



# SWM/BAE Sandblast and Paint Wastes Contaminated Surrounding Areas

- Internal memo from CRWQCB (1991, provided in Booth, 2004)
  - "sand blasting dust was observed on the ground at Chevron"
  - "dust from sand blasting operations at Southwest [Marine] is continually observed coming over the fence."
  - "a 'haze' over the sand blasting areas was obvious"
  - "Southwest [Marine] is causing a nuisance at Chevron and discharging sand blast dust to San Diego Bay..."
  - "TBT could be directly attributable to Southwest Marine's operations"

#### INTERNAL MEMORANDUM

TO: DTB/RS/BWP/DSJ

DATE:4/29/91

SUBJECT: APPARENT VIOLATIONS OF SOUTHWEST MARINE'S NPDES PERMIT

While at Chevron's Tank Farm, located adjacent to Southwest Marine, sand blasting dust was observed on the ground at Chevron. The dust from sand blasting operations at Southwest is continually observed coming over the fence. A "haze" over the sand blasting area was obvious. When Chevron initiates stormwater sampling, it is most likely that analytical results will show high concentrations of metals and TBT unless the ground at Chevron is frequently swept.

Southwest is causing a nuisance at Chevron and discharging sand blast dust to San Diego Bay through Chevron's storm drain system. If Southwest can't control their sand blast dust, maybe they should be required to sweep Chevron's property after each sand blasting operation.

Chevron has a three-stage clarifier for runoff. It might be interesting to sample the clarifier sediments for metals and TBT. The TBT could be directly attributable to Southwest Marine's operations.

file: Southwest Marine 03-137.01 Chevron, San Diego Marine Terminal 10-245.01

# SWM/BAE's Consultant Acknowledges PCB Source Attributable to Marine Railways

 "From [the beginning of San Diego Marine Construction Corporation's use of the site] through to the mid 1970s, sandblast and paint wastes were discharged directly to the Bay from upland and drydock areas (SWM/BAE reports: Woodward Clyde, 1995; Anchor, 2005)

contract work in the blasting area (3). Dust suppression system for blasting house consisted of blowers directed at the bay with a water spray to cause the blast dust to settle in the water (4). All wastes generated on the dry dock including blast grit, paint, etc. were discharged into the Bay (5).

Woodward Clyde (1995)

were deposited in recent industrial times in the vicinity of the marine railway. The nature of the elevated chemical concentrations (metals and PCBs) is consistent with past industrial uses of the marine railways (repair, maintenance, and sandblasting). Therefore, the potential sources of waste constituent discharges at the project site appear to be, overall, primarily confined to historical ship repair and maintenance activities.

Anchor (2005)

# Ubiquitous Oil Saturation Noted in SWM/BAE Shipways During Marine Railways Removal (1998)

Daily Log- Observations/ Turbidity Monitoring Southwest Marine- Marine Railway Removal Project, Ways 1 & Ways 2/3

Date: 8-18 18

Observer: Rock Selfine

Weather: close, simmy, wind suc 5+k

#### Observations:

	ways I time: 6	ways 2/3 time: /60F	Comments
Appearance of oil or other materials of petroleum origin	(yes)no	yes/no	THE OIL /UNTON PROSSE" AFTER OF OIL STREET WITH SEPARATE OF THE STREET DEFINE DEFINED
2) Discoloration and extent of any visible turbidity plume	noneminot/rignificant Some unious NAMENIN 6-51 cfc COMPANY @ (336)	none(minor/tignificant	SOME APPITHUR RETARS (UERNAME POLICY CHANGE
3) Condition of silt curtain, and any turbidity	good poor unacceptable (	good/pood/unacceptable	SEC CAMPOUT 2 MOONE
4) Odors	none/minor/significant	none/minor/significant	

#### **Turbidity Monitoring:**

	Station A (@ 0-10 feet) time: 1204	Station B (@ >50 feet) time:	Difference (Sta A- Sta B)	Difference less than 20%?
Turbidity Units (Fox)	destroy was con 1 AT CHARLES MENDEUT	BOTTONIO OUT @ 2.3 N -	ø.	(ed/no- If no, halt dredging operations, see note.

Comments: A Special Disc will be used for turbidity measurements. Station A will be inside any visual plume if possible.

Note: If the turbidity at Station A increases more than 20% over the turbidity of Station B, the dredging operations shall be suspended and appropriate measures taken. These include notifying the Regional Board Executive Officer and implementing remedial measures.

Exhibit 7b

# Ubiquitous Oil Saturation Noted in SWM/BAE Shipways During Marine Railways Removal (1998)

#### Daily Log- Observations/ Turbidity Monitoring Southwest Marine- Marine Railway Removal Project, Ways 1 & Ways 2/3

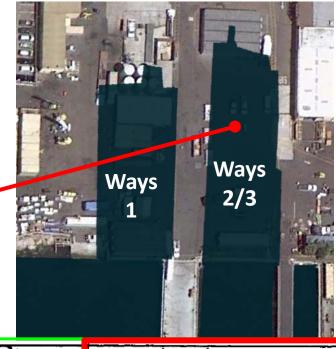
Date: 8-18 78

Observer: Now Superre

Weather: ocose, sum, was NOS+K

#### Observations:

	ine: <9	time: /ooF	Comments
Appearance of oil or other materials of petroleum origin	Action Actions	Cigliao	The one first ton music " extent on an are control to the state of the control of the state of the control of t
P) Discoloration and extent of any visible turbidity plame	non-mind significant Surge uniform 148 point 1-51 eff crashed Q(1984)	nenchine dignificant	Some Arthur Arthur Legentre Book Sout entitled Commercial Quarter from sorther from Court was reacted, perhaps but the Residences
Condition of all metain, and any trability	PROCESSION COM TON	Strongers ( some	
) Odors	none/minor/significant  U. proves Pattenty gysactified.	none/minor/significant U. PLANE - EALTH GYCANTIAN	



1) Appearance of oil or other materials of petroleum origin (yes)no

Cyst/no

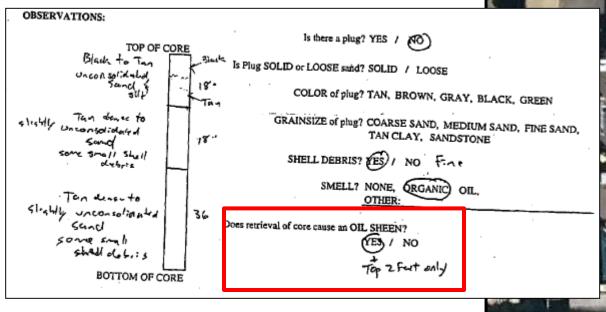
THE OIL JUATER MOUSE" LAYER OF OIL SINCEN WIND DEPOSITED IN NU CONNER OF LITTS 2/3. RETURN DURING DURING DURING DURING

THE OIL JUNIOR MOUSE" LATER OF OIL STACEN VINO BUTISTED ON NW COTONER OF LATES 2/3. RETUSED DUNING EXCAVATION OF EZ-4

morning seaus framo

Ways

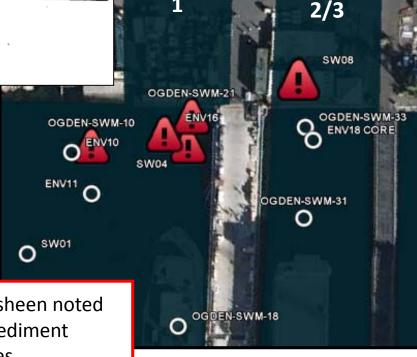
### Extensive Oil Saturation in Shipways Migrated to Bay



Does retrieval of core cause an OIL SHEEN? Top 2 Feet only

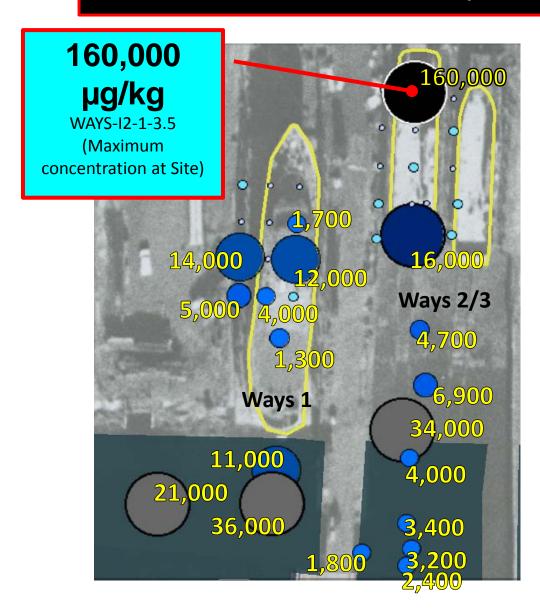


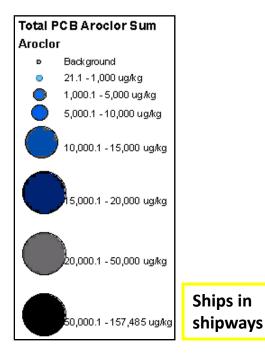
Oil sheen noted in sediment cores



Ways

### PCB Data Confirm SWM/BAE Shipways as PCB Source



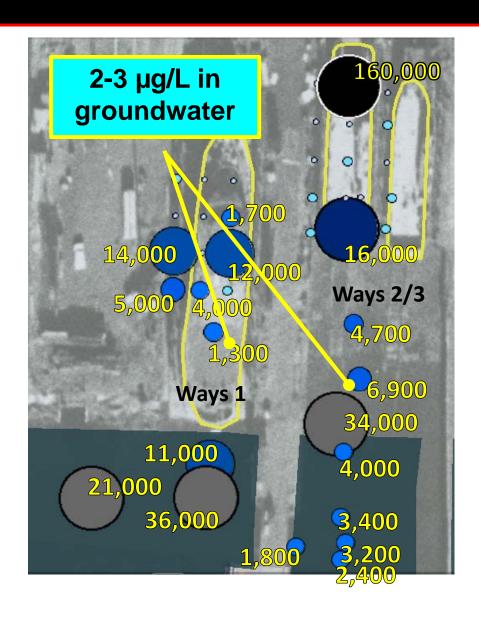


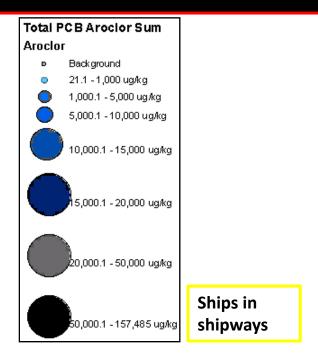
Concentrations represent maximum concentration of total PCB Aroclors at each location

Samples in shipways collected post-excavation of contaminated soils/sediments

#### **Data Sources**

### PCB Contamination Persists in SWM/BAE Shipways as Late as 2005



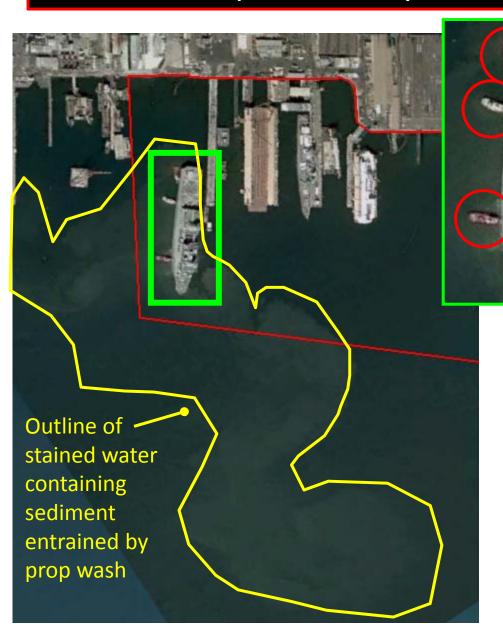


Concentrations represent maximum concentration of total PCB Aroclors at each location

Samples in shipways collected post-excavation of contaminated soils/sediments

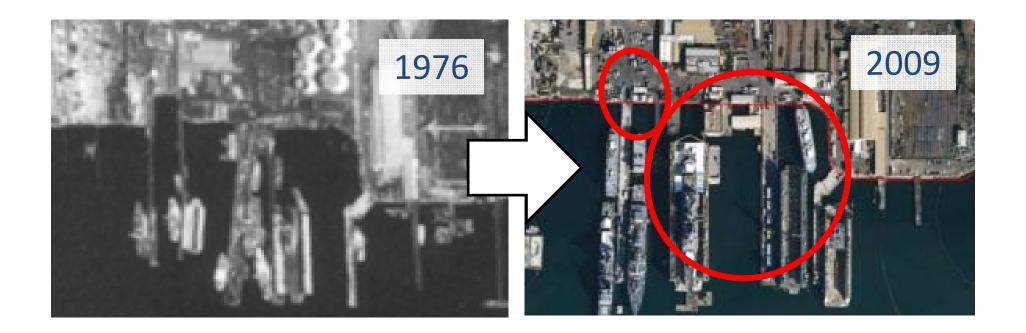
#### **Data Sources**

### SWM/BAE Operations Spread Historical Contamination



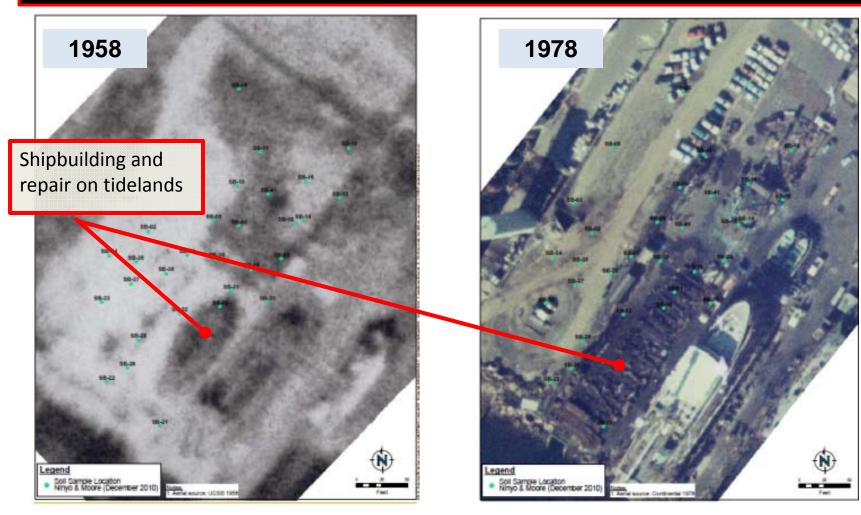
- Physical movement of sediment by shipyard activity:
  - Propellerwash (shown at left)
  - Dredging
  - In-water construction

### SWM/BAE Operations Spread Historical Contamination

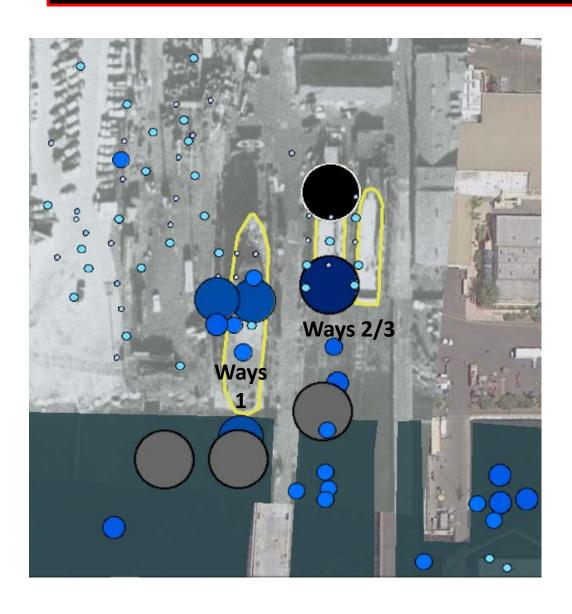


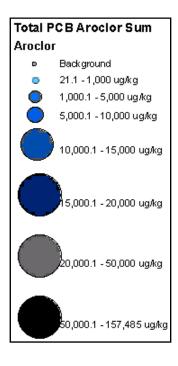
1970s-2000s: Major Pier Construction (Including complete replacement and extension of Pier 1); Filling of Shipways 1 and 2/3

# Shipyard Use of SDG&E Tidelands Began in 1958



# Runoff from Tidelands Insufficient to Cause a Condition of Pollution or Nuisance





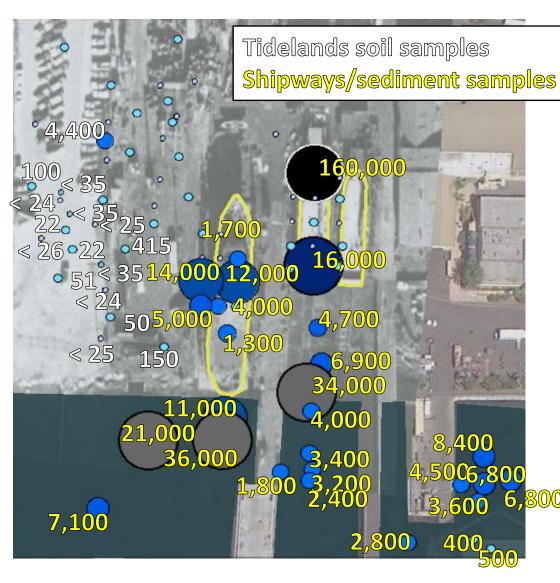
Ships in shipways

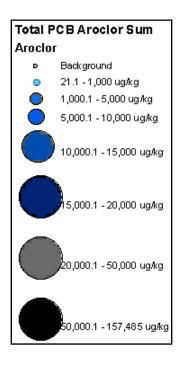
Concentrations represent maximum concentration of total PCB Aroclors at each location

Samples in shipways collected post-excavation of contaminated soils/sediments

#### **Data Sources**

# Runoff from Tidelands Insufficient to Cause a Condition of Pollution or Nuisance





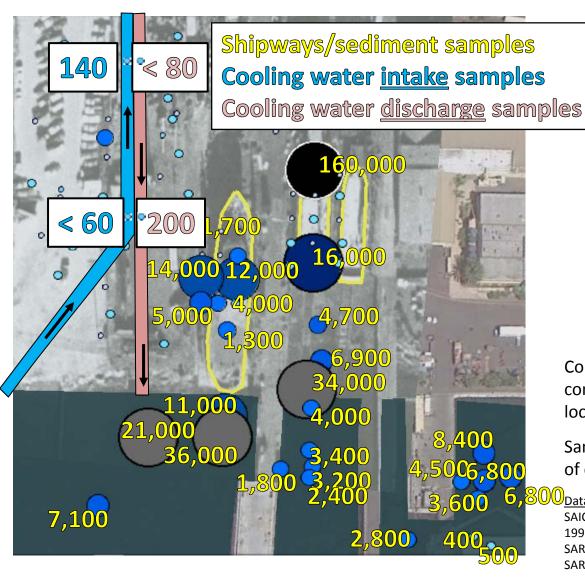
Ships in shipways

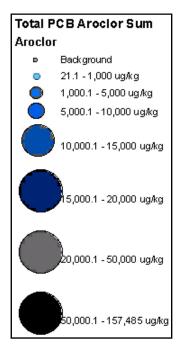
Concentrations represent maximum concentration of total PCB Aroclors at each location

Samples in shipways collected post-excavation of contaminated soils/sediments

#### Data Sources

# Cooling Water Discharge Insufficient to Cause a Condition of Pollution or Nuisance





Ships in shipways

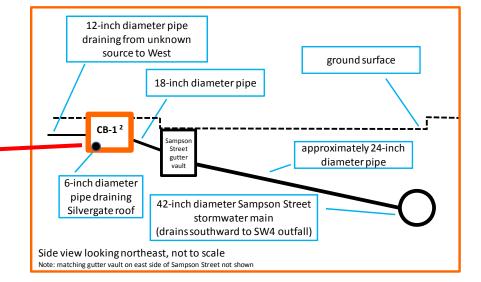
Concentrations represent maximum concentration of total PCB Aroclors at each location

Samples in shipways collected post-excavation of contaminated soils/sediments

#### Data Sources

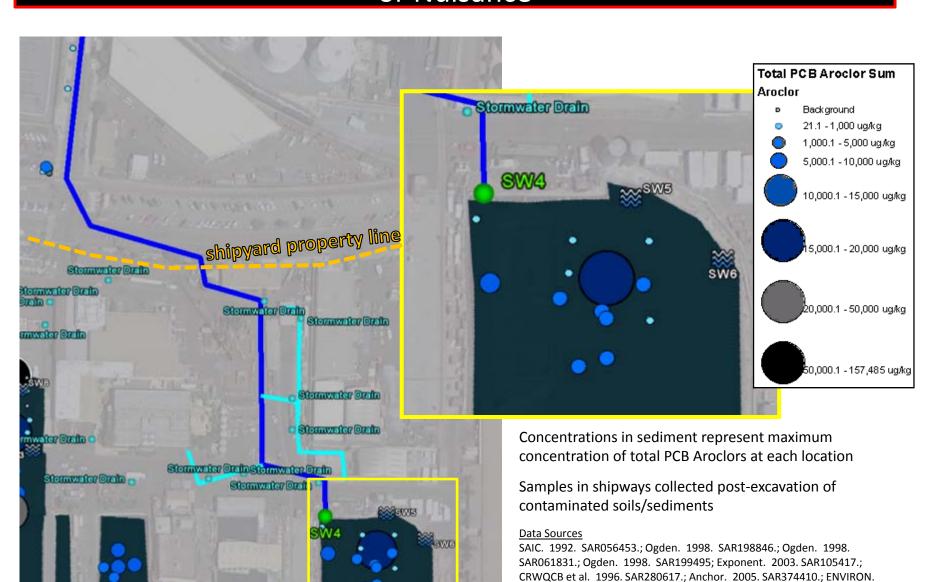
### Runoff from Silvergate Substation Did Not Flow Through CB-1

# **Legend** SW4 stormwater outfall location SW4 stormwater main Silvergate substation Sampson Street Notes: 1. December 30, 2004 USGS aerial photo. 2.CB-1 is upgradient of the Sampson Street gutter vault.



#### Exhibit 16a

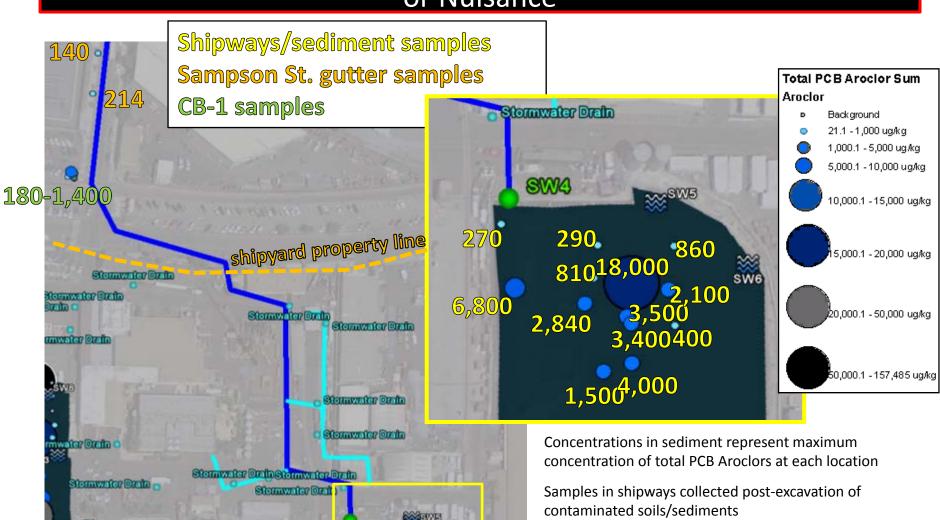
# Stormwater Runoff Insufficient to Cause a Condition of Pollution or Nuisance



2011.

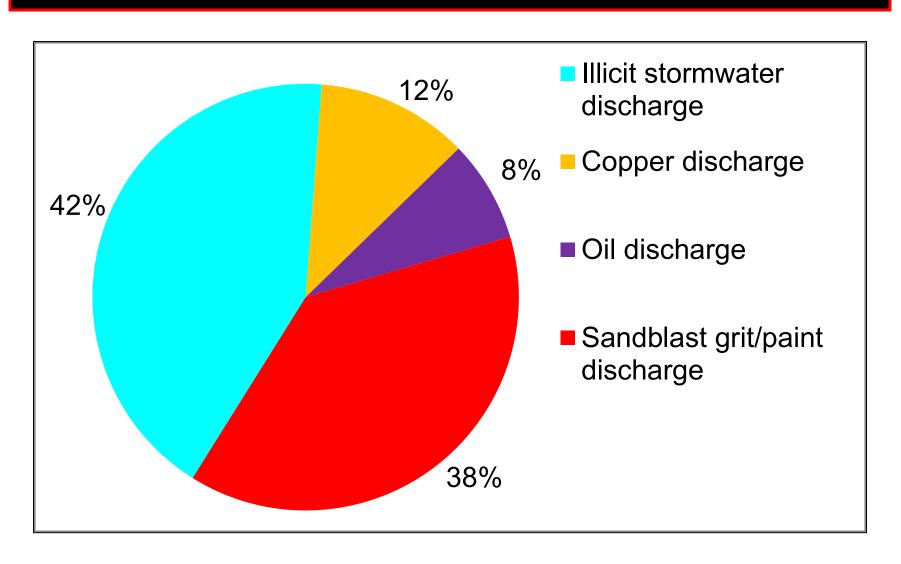
#### Exhibit 16b

# Stormwater Runoff Insufficient to Cause a Condition of Pollution or Nuisance



#### **Data Sources**

# Over 100 SWM/BAE Violations Noted in Administrative Record and DTR from 1983-2005



# CUT's Misstatement of SDG&E PCB Use in October 19, 2011 Hearing Brief

SDG&E also claims it should not be named as a Discharger despite operating a steam turbine power plant where equipment containing large quantities of PCBs was operated in "open" systems in close proximity to San Diego Bay for over 40 years. Despite its best effort to foist off

 Section 6 of the Toxic Substances Control Act (TSCA) states "no person may manufacture, process, or distribute in commerce or use any [PCB] in any manner other than in a totally enclosed manner" as of one year after the effective date of TSCA (i.e., as of January 1, 1978)."



# **Demonstrative Exhibits Summary**

Evidence	Shipyard	SDG&E
COC Use	Substantial documented evidence	Substantial documented evidence
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High Magnitude of COC Mass Releases	☑ Substantial evidence	No evidence
Corresponding Sitespecific Chemistry Data	Strong evidence indicating shipyard source  Concentrations in source areas (shipways) higher than sediment  Logical concentration gradient leading to source areas  Chemical fingerprint match	Strong evidence indicating absence of source  Concentrations in source areas and along transport pathways lower than sediment  Lack of logical concentration gradient leading to source areas  Chemical fingerprint mis-match

 $\square$  = Evidence supporting condition of pollution or nuisance

#### **Exhibit 1a-e** - Shipyard COC Sources

- ENVIRON. 2011. Technical Comments on May, 26, 2011 Documents Submitted on Behalf of Parties to the San Diego Shipyard Sediment Site. June 23.
- Booth. 2004. SAR163351. (Shipyard facility map)
- **Exhibit 2** Shipyard PCB Uses and Sources
- **Exhibit 3** Widespread Shipyard PCB Use in Marine Paint
  - Young, D.R., Heesen, T.C. 1974. Inputs and Distributions of Chlorinated Hydrocarbons in Three Southern California Harbors. SAR393796.

#### **Exhibit 4** - Shipyard Marine Paints -

Direct Releases of Paint to Shipyard Site Sediment

- CRWQCB. 1972. Wastes Associated with Shipbuilding and Repair Facilities in San Diego Bay. SAR374265.
- USEPA. 1974. Guidelines for the Control of Shipyard Pollutants. Draft Report to the San Diego Regional Water Quality Control Board. SAR374317.
- Eco Systems. 1992. Report. SAR011470.
- Eco Systems. 2000. Report. SAR035020.

- **Exhibit 5** SWM/BAE Sandblast and Paint Wastes Contaminated Surrounding Areas
  - Booth, S. 2004. Historical Study, San Diego Waterfront Sampson Street to 28th Street, Appendix J, San Diego, California. SAR169862.
- **Exhibit 6** SWM/BAE's Consultant Acknowledges PCB Source Attributable to Marine Railways
  - Woodward Clyde. 1995. HISTORICAL OCCUPANCY SEARCH, SOUTHWEST MARINE. Submitted to California Regional Water Quality Control Board. SAR056270.
  - Anchor. 2005. Site Investigation and Characterization Report For 401 Water Quality Certification, BAE Systems, Inc. (Formerly southwest Marine, Inc.) Bulkhead Extension and Yard Improvement Phase 2 Activities. Revised August 2005. SAR374410.
- **Exhibit 7a-b** Ubiquitous Oil Saturation Noted in SWM/BAE Shipways During Marine Railways Removal (1998)
  - Ogden. 1998. Final Report Site Remediation, Marine Railway Removal Project, Southwest Marine Shipyard. December. SAR198846.

- **Exhibit 8** Extensive Oil Saturation in Shipways Migrated to Bay
  - Ogden. 1998. Final Report Sediment Characterization Study and Remediation Plan, Southwest Marine Shipyard. December. SAR061831.
- **Exhibit 9** PCB Data Confirm SWM/BAE Shipways as PCB Source
  - SAIC. 1992. SAR056453.
  - Ogden. 1998. SAR198846.
  - Ogden. 1998. SAR061831.
  - Ogden. 1998. SAR199495
  - Exponent. 2003. SAR105417.
  - CRWQCB et al. 1996. SAR280617.
  - ENVIRON. 2011. Summary of Sampling and Analysis of Soil and Cooling Water Tunnels, BAE Subleasehold Area, San Diego Bay, San Diego, CA. February 23.
- **Exhibit 10** PCB Contamination Persists in SWM/BAE Shipways as Late as 2005
  - Anchor. 2005. Site Investigation and Characterization Report For 401 Water Quality Certification, BAE Systems, Inc. (Formerly southwest Marine, Inc.) Bulkhead Extension and Yard Improvement Phase 2 Activities. Revised August 2005. SAR374410.

# **Exhibit 11a-b** - SWM/BAE Operations Spread Historical Contamination

- Conder, J.M. 2011. Comparison of 2001-2002 and 2011 Chemical Conditions in Surface Sediment at the San Diego Shipyard Sediment Site. March 11.
- ENV America. 2004. SAR193391.

# **Exhibit 12 -** Shipyard Use of SDG&E Tidelands Began in 1958

 ENVIRON. 2011. Summary of Sampling and Analysis of Soil and Cooling Water Tunnels, BAE Subleasehold Area, San Diego Bay, San Diego, CA. February 23.

Exhibit 13a-b - Runoff from Tidelands Insufficient to Cause a Condition of Pollution or Nuisance

- SAIC. 1992. SAR056453.
- Ogden. 1998. SAR198846.
- Ogden. 1998. SAR061831.
- Ogden. 1998. SAR199495
- Exponent. 2003. SAR105417.
- CRWQCB et al. 1996. SAR280617.
- Anchor. 2005. SAR374410.; ENVIRON. 2011.
- ENVIRON. 2011. Summary of Sampling and Analysis of Soil and Cooling Water Tunnels, BAE Subleasehold Area, San Diego Bay, San Diego, CA. February 23.

**Exhibit 14** - Cooling Water Discharge Insufficient to Cause a Condition of Pollution or Nuisance

- SAIC. 1992. SAR056453.
- Ogden. 1998. SAR198846.
- Ogden. 1998. SAR061831.
- Ogden. 1998. SAR199495
- Exponent. 2003. SAR105417.
- CRWQCB et al. 1996. SAR280617.
- Anchor. 2005. SAR374410.; ENVIRON. 2011.
- ENVIRON. 2011. Summary of Sampling and Analysis of Soil and Cooling Water Tunnels, BAE Subleasehold Area, San Diego Bay, San Diego, CA. February 23.

#### Exhibit 15 - Runoff from Silvergate Substation Did Not Flow Through CB-1

• ENVIRON. 2011. Technical Comments on May, 26, 2011 Documents Submitted on Behalf of Parties to the San Diego Shipyard Sediment Site. June 23.

#### Exhibit 16a-b - Stormwater Runoff Insufficient to Cause a Condition of Pollution or Nuisance

- SAIC. 1992. SAR056453.
- Ogden. 1998. SAR198846.
- Ogden. 1998. SAR061831.
- Ogden. 1998. SAR199495
- Exponent. 2003. SAR105417.
- CRWQCB et al. 1996. SAR280617.
- ENVIRON. 2011. Technical Comments on May, 26, 2011 Documents Submitted on Behalf of Parties to the San Diego Shipyard Sediment Site. June 23.

#### Exhibit 17 - Over 100 SWM/BAE Violations Noted in Record

SAR050536-SAR050539.

#### Exhibit 18 - CUT's Misstatement of SDG&E PCB Use in October 19, 2011 Hearing Brief

- SWRCB. 2011. In the Matter of Tentative Cleanup and Abatement Order No. R9-2011-0001 (Formerly R9-2010-0002) Shipyard Sediment Cleanup; San Diego Water Board Cleanup Team's Hearing Brief. October 19.
- SDG&E. 1981. Spill Prevention and Countermeasure Plan. Silver Gate Power Plant. Phase I Appendix. SARI193541.

#### **Exhibit 19 -** Demonstrative Exhibits Summary