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<td>aqueous film forming foam</td>
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<tr>
<td>BMP</td>
<td>best management practice</td>
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<tr>
<td>CAAP</td>
<td>Clean Air Action Plan</td>
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<td>CARB</td>
<td>California Air Resources Board</td>
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<td>CCR</td>
<td>California Code of Regulations</td>
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<tr>
<td>CFR</td>
<td>Code of Federal Regulations</td>
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<tr>
<td>CPP</td>
<td>controllable pitch propellers</td>
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<td>CWA</td>
<td>Clean Water Act</td>
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<td>EGS</td>
<td>exhaust gas scrubber</td>
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<td>EPA</td>
<td>Environmental Protection Agency</td>
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<tr>
<td>FIFRA</td>
<td>Federal Insecticide, Fungicide, and Rodenticide Act</td>
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<tr>
<td>ICCP</td>
<td>impressed current cathodic protection</td>
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<td>IMO</td>
<td>International Maritime Organization</td>
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<tr>
<td>LA-RWQCB</td>
<td>Los Angeles Regional Water Quality Control Board</td>
</tr>
<tr>
<td>MARPOL</td>
<td>International Convention for the Prevention of Marine Pollution from Ships</td>
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<td>MEPC</td>
<td>Marine Environmental Protection Committee</td>
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<tr>
<td>MSD</td>
<td>marine sanitation device</td>
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<tr>
<td>nm</td>
<td>nautical mile</td>
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<tr>
<td>NPDES</td>
<td>National Pollutant Discharge Elimination System</td>
</tr>
<tr>
<td>POLA</td>
<td>Port of Los Angeles</td>
</tr>
<tr>
<td>POLB</td>
<td>Port of Long Beach</td>
</tr>
<tr>
<td>Ports</td>
<td>Port of Los Angeles and Port of Long Beach</td>
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<tr>
<td>PCB</td>
<td>polychlorinated biphenyl</td>
</tr>
<tr>
<td>PRC</td>
<td>Public Resources Code</td>
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<tr>
<td>SLC</td>
<td>California State Lands Commission</td>
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<tr>
<td>SWRCB</td>
<td>State Water Resources Control Board</td>
</tr>
<tr>
<td>TBT</td>
<td>tributyltin</td>
</tr>
<tr>
<td>VGP</td>
<td>Vessel General Permit</td>
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<tr>
<td>WRAP</td>
<td>Water Resources Action Plan</td>
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</table>
SECTION 1: Introduction

The Port of Long Beach (POLB, Ports) and Port of Los Angeles (POLA, Ports) are the two busiest container ports in the United States, with dozens of vessel calls on any given day. These vessels, which enter the waters of the Ports from domestic and international locations, are required to follow all federal, state, and local laws regulating the discharges and maintenance activities that are incidental to the normal operation of vessels. In August of 2009, the Ports adopted the Water Resources Action Plan (WRAP), an all-encompassing plan designating Port resources to establish and expand efforts to reduce and eliminate water and sediment-related pollution in the port environment. One of the control measures in the WRAP is to develop a discharge guidance manual for vessel operators whose vessels call at the Ports, including both U.S. and foreign flagged vessels.

Water quality in the Ports has shown significant improvement over the past three decades. Dissolved oxygen concentrations in most of the harbor approach those of the nearby ocean; with the exception of copper, concentrations of dissolved metals do not exceed any regulatory criteria; dissolved organics such as pesticides and polychlorinated biphenyls (PCB) are rarely detected and, with the exception of tributyltin (TBT), do not exceed regulatory criteria; and a 2002-2003 Los Angeles Regional Water Quality Control Board (LA-RWQCB) study found no instances of toxicity from Port waters (Lyons and Birosk, SWRCB, 2007). The listings under Section 303(d) of the Clean Water Act (CWA) for the Ports are not based on concentrations of dissolved pollutants, but rather on localized areas of sediment contamination and on the presence of sediment toxicity, benthic community effects, and elevated concentrations of pollutants in fish tissue (for a detailed discussion on the current condition of water in the Ports, see the WRAP, available at www.polb.com/environment/water_quality/wrap.asp or www.portoflosangeles.org/environment/wrap.asp).

Currently, several types of on-water operational and maintenance activities occur regularly in the Ports, often required for the safety of the vessel and crew, which can result in discharges to Port waters. Federal and state regulations prohibit discharges of pollutants and contaminated water in the Ports, and the Ports’ tariff provisions prohibit discharge of any potentially polluting material into the Ports without approval of the respective Executive Directors. On January 1, 2006, the California Clean Coast Act of 2005 became effective which imposed prohibitions on five types of discharges (sewage, hazardous waste, oily bilgewater, graywater, and other waste which includes medical waste and photography and dry cleaning chemicals) from two specific types of vessels, oceangoing ships with sufficient holding tank capacity and large passenger vessels including cruise ships.

The 2008 Vessel General Permit (VGP), which regulates 26 sources of discharge, was signed into law by the Environmental Protection Agency (EPA) on December 18, 2008 (effective February 6, 2009). The 2013 VGP becomes effective December 19, 2013. The 2013 VGP expands on the original permit, regulating discharges incidental to the normal operation of vessels operating in a capacity as a means of transportation within waters of the United States. The 2013 VGP includes general effluent limits applicable to all discharges; required and recommended best management practices applicable to 27 specific discharge streams; narrative
water-quality based effluent limits; inspection, monitoring, recordkeeping, and reporting requirements; and additional requirements applicable to certain vessel types. The VGP applies to all vessels that operate within Federal waters, including U.S. and foreign flagged vessels, with some exceptions. Recreational vessels as defined in section 502(25) of the CWA as well as vessels of the Armed Forces as defined in section 312 (a) (14) of the CWA are not subject to the VGP. In addition, with the exception of ballast water discharges, non-recreational vessels less than 79 feet (24.08 meters) in length, and all commercial fishing vessels, regardless of length, are not subject to the VGP. The EPA has released a draft VGP for small vessels. No timetable has been provided for the release of the final Small VGP. For additional information on the VGP, see the EPA’s VGP website (http://cfpub.epa.gov/npdes/home.cfm?program_id=350).

1.1 Purpose

The purpose of this vessel guidance manual is to provide a quick reference guide informing interested parties on allowable and prohibited maintenance activities and discharges within the Ports. This manual applies to large commercial vessels generally over 79 feet in length and will be available to vessel operators, vessel pilots, facility managers, harbor patrol and port police officers, terminal services representatives, and the public to identify allowable discharges within the Ports. For each discharge category identified in Section 3.3, allowable procedures and recommended best management practices (BMPs) are identified. The BMPs recommended in this manual are not assumed to be the only available BMPs for that discharge. Further, following the BMPs recommended in this manual does not authorize vessel operators to discharge within the Ports or state or federal waters. Vessel owners/operators must apply for and obtain all required permits and approvals for allowable discharges. It is the responsibility of the vessel operators, not Port staff, to ensure compliance with all applicable discharge and maintenance regulations.

For discharge guidance related to recreational vessels, see the Clean Marinas Program for POLA and the Small Vessel Maintenance and Discharge Guidebook for POLB. Further, the EPA has released a draft VGP for small vessels (under 79 feet in length).

1.2 Allowable and Prohibited Discharges and Maintenance Activities

The following table outlines general discharges and vessel-based maintenance activities that may occur in the Ports with appropriate permits and approvals. Each discharge is identified as allowable or prohibited within the POLB and POLA, with reference to the discussion identifying BMPs that must be put in place for each discharge.
<table>
<thead>
<tr>
<th>Discharge/Activity</th>
<th>Allowable?</th>
<th>Discharge Restriction Summary</th>
<th>Regulation</th>
<th>Restrictions/BMP Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deck Washdown, Maintenance, Firefighting, Hull Cleaning, and Related Discharges</td>
<td>Restrictions</td>
<td>Deck washdown is allowed in the Ports as long as the runoff does not contain any pollutants, including trash, oils, metals, paint, or other debris.</td>
<td>POLB Tariff No. 4; POLA Tariff No. 4; VGP Section 2.2.1</td>
<td>3.3.1</td>
</tr>
<tr>
<td>Above water hull cleaning and painting</td>
<td>Restrictions</td>
<td>Above water hull cleaning and painting is allowed in the Ports but must follow specific BMPs. Spray equipment is not allowed for any on-water painting.</td>
<td>VGP Section 2.2.1; CCR Title 2, Division 3, Chapter 1, Article 4.8; PRC 71200 et seq.; POLB Painting BMPs; POLB Tariff No. 4</td>
<td>3.3.2</td>
</tr>
<tr>
<td>Sandblasting</td>
<td>No</td>
<td>Sandblasting is not allowed on vessels that are in-water.</td>
<td>POLB Tariff No. 4; POLA</td>
<td>3.3.3</td>
</tr>
<tr>
<td>Propeller polishing and other in-water maintenance</td>
<td>Restrictions</td>
<td>In-water hull cleaning of vessels with biocide-based antifouling paint is prohibited. Propeller polishing and other in-water maintenance is not recommended or preferred in the Ports, but is allowed assuming all required rules, regulations, BMPs and the best available technologies, as determined by both the SLC and the SWRCB, are used.</td>
<td>SWRCB VGP Certification - FAQ; VGP 2.2.9; POLB Tariff No. 4</td>
<td>3.3.4</td>
</tr>
<tr>
<td>Aqueous film forming foam (firefighting)</td>
<td>Emergency Only</td>
<td>The discharge of AFFF within the Ports is allowable only during an emergency.</td>
<td>VGP 2.2.5</td>
<td>3.3.5</td>
</tr>
<tr>
<td>Firemain system</td>
<td>Emergency and Testing Only</td>
<td>Discharges from the firemain system are allowed in cases of emergency, when necessary to ensure the safety of the vessel and crew, as well as for testing purposes to ensure the system will be operational in an emergency.</td>
<td>VGP 2.2.12; (see also VGP 2.2.1 for deck washdown restrictions).</td>
<td>3.3.6</td>
</tr>
<tr>
<td>Cathodic protection</td>
<td>Yes</td>
<td>There are no regulations pertaining to specific types of cathodic protection devices. The VGP includes recommended BMPs.</td>
<td>VGP 2.2.7</td>
<td>3.3.7</td>
</tr>
</tbody>
</table>

**Aquatic Nuisance Species**

<p>| Ballast water | Restrictions | Ballast water shall not be discharged without treatment or exchange (unless for safety purposes) into Port waters unless said ballast water originated in the POLB, POLA, | CCR Title 2, Division 3, Chapter 1, Article 4.6/4.7; VGP Section 2.2.3; CFR Title 33, Part 151 (USCG); | 3.3.8 |</p>
<table>
<thead>
<tr>
<th>Discharge/Activity</th>
<th>Allowable?</th>
<th>Discharge Restriction Summary</th>
<th>Regulation</th>
<th>Restrictions/BMP Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>or the El Segundo marine oil terminal.</td>
<td></td>
<td></td>
<td>PRC 71200 et seq.; SWRCB VGP Certification; POLB Tariff No. 4; POLA Tariff No. 4</td>
<td></td>
</tr>
<tr>
<td>Chain locker effluent discharge</td>
<td>Restrictions</td>
<td>For vessels that leave U.S. waters (i.e. Ports) at least once per month, chain lockers may not be rinsed or pumped out within the Port or any other U.S. water unless required for safety. For all other vessels that remain in the Ports and do not leave waters subject to the VGP, chain locker effluent with visible pollutants must not be discharged into Port waters.</td>
<td>POLB Tariff No. 4; POLA Tariff No. 4; VGP 2.2.8</td>
<td>3.3.9</td>
</tr>
<tr>
<td>Seawater piping biofoul prevention</td>
<td>Restrictions</td>
<td>No pesticides or chemicals banned for use in the United States may be discharged into the Ports. This includes any substance or material harmful to fish, plant life, mammals, or bird life. Removal of fouling organisms must not occur in the Ports.</td>
<td>VGP 2.2.20; Fish and Game Code 5650</td>
<td>3.3.10</td>
</tr>
<tr>
<td>Anti-fouling hull coating</td>
<td>Restrictions</td>
<td>The application of anti-fouling paint containing TBT or other organotins is prohibited within U.S. and international waters. If a vessel has previous hull coatings containing TBT, this coating must be covered by a non-organotin based product prior to entering the Ports.</td>
<td>VGP 2.2.4; IMO Resolution A.928(22)</td>
<td>3.3.11</td>
</tr>
<tr>
<td>Underwater hull cleaning</td>
<td>Restrictions</td>
<td>Underwater hull cleaning, including fouling removal, is prohibited on vessels with biocide-based antifouling paint. In-water hull cleaning on vessels with non-biode based antifouling paint is not recommended or preferred, but is allowed in the Ports assuming all required rules, regulations, and BMPs, as identified by the EPA, SWRCB and the SLC, are followed.</td>
<td>CCR Title 2, Division 3, Chapter 1, Article 4.8; VGP 2.2.23; SWRCB VGP Certification - FAQ; POLB Tariff No. 4</td>
<td>3.3.12</td>
</tr>
<tr>
<td>Engine Room and Contact Discharges</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bilgewater</td>
<td>No</td>
<td>Bilgewater is prohibited from being discharged into Port waters.</td>
<td>POLB Tariff No. 4; POLA Tariff No. 4</td>
<td>3.3.13</td>
</tr>
<tr>
<td>Boiler/</td>
<td>Restrictions</td>
<td>Vessels greater than 400 gross</td>
<td>VGP 2.2.6</td>
<td>3.3.14</td>
</tr>
<tr>
<td>Discharge/Activity</td>
<td>Allowable?</td>
<td>Discharge Restriction Summary</td>
<td>Regulation</td>
<td>Restrictions/ BMP Section</td>
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<tr>
<td>economizer blowdown</td>
<td></td>
<td>Ions that leave the Ports at least once per week cannot discharge within 3 nm of the shore, unless: the vessel remains in the Ports for longer than the necessary duration between blowdowns; the vessel needs to conduct blowdown immediately before entering drydock, or; for safety purposes.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elevator pit effluent</td>
<td>Emergency</td>
<td>Discharges of untreated elevator pit effluent are prohibited within Port waters, unless during an emergency.</td>
<td>POLB Tariff No. 4; POLA Tariff No. 4; VGP 2.2.11</td>
<td>3.3.15</td>
</tr>
<tr>
<td>Gas turbine wash water</td>
<td>No</td>
<td>Gas turbine washwater must not be directly discharged within the Ports. Washwater should be collected and properly disposed of onshore.</td>
<td>Fish and Game Code 5650; POLB Tariff No. 4; POLA Tariff No. 4; VGP 2.2.14</td>
<td>3.3.16</td>
</tr>
<tr>
<td>Motor gasoline and compensating discharge</td>
<td>Restrictions</td>
<td>The discharge of motor gasoline and compensating effluent that comes into contact with oil is prohibited in the Ports.</td>
<td>POLB Tariff No. 4; POLA Tariff No. 4; VGP 2.2.16</td>
<td>3.3.17</td>
</tr>
<tr>
<td>Welldeck discharges</td>
<td>Restrictions</td>
<td>Welldeck discharges that contain graywater from smaller vessels shall not be discharged within Port waters except in cases of emergency. Welldeck discharges from washdown of gas turbine engines may not be discharged within the Ports. Welldeck discharges from equipment and vehicle washdowns must be free from garbage and must not contain oil.</td>
<td>POLB Tariff No. 4; POLA Tariff No. 4; Fish and Game Code 5650; VGP 2.2.24</td>
<td>3.3.18</td>
</tr>
<tr>
<td>Exhaust gas scrubber washwater discharges</td>
<td>Restrictions</td>
<td>Exhaust gas scrubber washwater discharge must not contain oil or toxins. Sludge generated from treating exhaust gas scrubber washwater discharge must not be discharged in the Ports.</td>
<td>POLB Tariff No. 4; POLA Tariff No. 4; VGP 2.2.26; 40 CFR Part 110</td>
<td>3.3.19</td>
</tr>
<tr>
<td>Boat engine wet exhaust</td>
<td>Yes</td>
<td>Vessel operators are asked to minimize the use of small vessels generating wet exhaust while in the Ports to those activities required for the safety of the vessel and/or crew. Vessel operators are encouraged to consider the use of 4-stroke engines as opposed to 2-stroke engines to reduce</td>
<td>VGP 2.2.21</td>
<td>3.3.20</td>
</tr>
<tr>
<td>Discharge/Activity</td>
<td>Allowable?</td>
<td>Discharge Restriction Summary</td>
<td>Regulation</td>
<td>Restrictions/BMP Section</td>
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<tr>
<td><strong>Non-Contact Discharges</strong></td>
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<tr>
<td>Distillation and reverse osmosis</td>
<td>Restrictions</td>
<td>Brine from the distillation system and reverse osmosis water that comes in contact with machinery or industrial equipment, toxic or hazardous materials, or wastes shall not be discharged in the Ports.</td>
<td>VGP 2.2.10</td>
<td>3.3.21</td>
</tr>
<tr>
<td>Freshwater layup</td>
<td>Restrictions</td>
<td>Vessel operators shall minimize the amount of disinfection agents used in freshwater layup to the minimum required to prevent aquatic growth.</td>
<td>VGP 2.2.13</td>
<td>3.3.22</td>
</tr>
<tr>
<td>Non-oily machinery wastewater</td>
<td>Restrictions</td>
<td>Non-oily machinery wastewater shall not be discharged in the Ports if it becomes contaminated by oil or any additives that are toxic or bioaccumulative in nature.</td>
<td>VGP 2.2.17; POLB Tariff No. 4; POLA Tariff No. 4</td>
<td>3.3.23</td>
</tr>
<tr>
<td>Refrigeration and air condensate discharge</td>
<td>Yes</td>
<td>Clean condensation discharge is allowed in the Ports.</td>
<td>VGP 2.2.18</td>
<td>3.3.24</td>
</tr>
<tr>
<td>Cooling sea water</td>
<td>Restrictions</td>
<td>When possible, non-contact engine cooling water should be discharged when the vessel is underway so that any thermal impacts are dispersed. If it must be discharged in the Ports, the discharge rate shall be reduced to minimize thermal impacts to the Port waters and ensure that the discharge does not contain trace metals or oils. If oils or metals are present, the discharge is prohibited in the Ports.</td>
<td>VGP 2.2.19</td>
<td>3.3.25</td>
</tr>
<tr>
<td>Sonar dome discharge</td>
<td>No</td>
<td>The water inside the sonar dome shall not be discharged into the Ports.</td>
<td>VGP 2.2.22</td>
<td>3.3.26</td>
</tr>
<tr>
<td><strong>Graywater and Sewage (Blackwater) Discharge, Fish Effluent</strong></td>
<td></td>
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<tr>
<td>Graywater</td>
<td>Restrictions</td>
<td>Discharge of graywater is prohibited within the Ports from large passenger vessels (i.e cruise ships) and from those oceangoing vessels 300 gross tons or larger with adequate holding capacity. All other vessels must minimize the discharge of graywater while in port.</td>
<td>California Clean Coast Act (PRC 72400); VGP 2.2.15</td>
<td>3.3.27</td>
</tr>
<tr>
<td>Sewage</td>
<td>No</td>
<td>The discharge of sewage</td>
<td>POLB Tariff No. 4;</td>
<td>3.3.28</td>
</tr>
<tr>
<td>Discharge/Activity</td>
<td>Allowable?</td>
<td>Discharge Restriction Summary</td>
<td>Regulation</td>
<td>Restrictions/ BMP Section</td>
</tr>
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</tr>
<tr>
<td>Graywater mixed with sewage from vessels</td>
<td>No</td>
<td>The discharge of graywater mixed with sewage (treated or untreated) is prohibited within the Ports and California waters.</td>
<td>POLA Tariff No. 4; CWA Sec. 312; MARPOL Annex IV; California Clean Coast Act (PRC 72400); California No Discharge Zone Rule</td>
<td>3.3.27; 3.3.28</td>
</tr>
<tr>
<td>Fish Hold Effluent</td>
<td>Restrictions</td>
<td>All reasonable steps must be taken to prevent the discharge of excess fish hold water and ice while the vessel is stationary at the pier.</td>
<td>VGP Sec. 2.2.27; POLA Tariff No. 4; POLB Tariff No. 4</td>
<td>3.3.29</td>
</tr>
</tbody>
</table>

Many of the regulations above can be found at [www.calregs.com](http://www.calregs.com) or [www.leginfo.ca.gov/calaw.html](http://www.leginfo.ca.gov/calaw.html).

### 1.3 Contact Information

For more information on vessel discharge regulations and allowable on-water maintenance, please contact the appropriate agency or department, below:

**Table 2 – Agency Contact Information**

<table>
<thead>
<tr>
<th>Agency</th>
<th>Issue</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Protection Agency</td>
<td>Vessel General Permit</td>
<td>Ryan Alpert – (202) 564-0763 <a href="mailto:vgp@epa.gov">vgp@epa.gov</a></td>
</tr>
<tr>
<td>U.S. Coast Guard</td>
<td>Federal Requirements</td>
<td>(310) 521-3801 (562) 577-0334 (24 hours)</td>
</tr>
<tr>
<td>State Water Resources Control Board</td>
<td>State Requirements</td>
<td>Vicky Whitney – (916) 341-5455</td>
</tr>
<tr>
<td>California State Lands Commission</td>
<td>State Requirements</td>
<td>(562) 499-6312</td>
</tr>
<tr>
<td>Port of Long Beach</td>
<td>Harbor Patrol</td>
<td>(562) 590-4185</td>
</tr>
<tr>
<td></td>
<td>Terminal Services</td>
<td>(562) 283-7750</td>
</tr>
<tr>
<td></td>
<td>Environmental Planning</td>
<td>(562) 283-7100</td>
</tr>
<tr>
<td>Port of Los Angeles</td>
<td>Port Police</td>
<td>(310) 732-3500</td>
</tr>
<tr>
<td></td>
<td>Wharfingers</td>
<td>(310) 732-3810</td>
</tr>
<tr>
<td></td>
<td>Environmental Management</td>
<td>(310) 732-3675</td>
</tr>
</tbody>
</table>
SECTION 2: Regulations

Water-related activities in the Port complex are controlled by an overlapping network of local, state, federal, and international laws and regulations. Because maritime commerce involves interstate and international commerce, the various elements of the goods movement chain fall under a number of jurisdictions. As a result, the authority to address a given discharge or activity is not always clear.

The principle federal law governing vessel discharge and maintenance activities is the EPA’s VGP. In addition, the California State Lands Commission (SLC) and the State Water Resources Control Board (SWRCB) have identified discharge regulations, including the California Clean Coast Act of 2005, as has the POLB and POLA.

Federal regulations pertaining to ballast water management are currently being developed by the U.S Coast Guard, with assistance from other federal and state agencies, including the SLC. As such, there is the potential that new or updated ballast water management regulations will be identified. Refer to the SLC for updates.

2.1 Federal Laws and Regulations

Clean Water Act: The CWA (92-500), which is administered primarily by the EPA, governs the discharge of pollutants to waters of the United States through the National Pollutant Discharge Elimination System (NPDES) permit system.

Vessel General Permit: Under the authority of the CWA Section 402, the EPA recently issued a new nationwide NPDES permit related to vessel discharges within U.S. waters (see http://cfpub.epa.gov/npdes/vessels/vgpermit.cfm for more detail). The permit’s requirements include narrative effluent discharge limits to be achieved through operational control measures and the use of best available technology and inspection, monitoring, recordkeeping, and reporting requirements. Additional requirements are applicable to certain vessel types. The VGP is applicable to specific vessel types and lengths, including cruise ships, oil tankers, bulk carriers, container ships, and emergency response vessels, that operate within the Ports. All recreational and military vessels are exempt from coverage under this permit. All other vessels less than 79 feet in length and all commercial fishing vessels (regardless of size) are excluded from this permit, except for discharges of ballast water. The VGP is administered and enforced by the EPA.

The VGP’s requirements overlap with a number of existing laws and regulations. Vessel operators must also comply with those provisions of the following laws and regulations applicable to specific vessels (not intended to be an exhaustive list).

33 CFR parts 151 and 401: Coast Guard ballast water management, discharge, and exchange requirements.

33 CFR part 155 Subparts B and C: Coast Guard oil pollution prevention requirements.
33 CFR part 159: Coast Guard sewage discharge requirements.

40 CFR part 110, 117, and 302: EPA oil or hazardous substance discharge reporting requirements.

40 CFR 122.44(p): Coast Guard requirements for safe storage and transportation of pollutants.

40 CFR part 140: EPA sewage discharge requirements.


33 USC 190-1915: Act to prevent pollution from ships.


2.2 State Laws and Regulations

California State Lands Commission: The SLC was established in 1938 with authority detailed in Division 6 of the California Public Resources Code (PRC). The staff of the SLC serves the people of California by providing stewardship of the lands, waterways, and resources entrusted to its care through economic development, protection, preservation, and restoration. The following PRC articles were established by the SLC to facilitate the discharging of ballast water and hull maintenance in California waters.

Article 4.6 – Ballast Water Regulations for Vessels Arriving at California Ports or Places after Departing from Ports or Places within the Pacific Coast Region: The purpose of Article 4.6 (CCR Title 2, Division3, Chapter 1) is to move the state toward elimination of the discharge of non-indigenous species into the waters of the state. Under Article 4.6, the operator in charge of a vessel that arrives at a California port (i.e. POLB, POLA) shall employ at least one of the following ballast water management practices:

- Exchange the vessel's ballast water in near-coastal waters, before entering the waters of the state, if that ballast water has been taken on in a port or place within the Pacific Coast region.
- Retain all ballast water on board the vessel.
- Use an alternative, environmentally sound method of ballast water management that, before the vessel begins the voyage, has been approved by the commission or the United States Coast Guard as being at least as effective as exchange, using mid-ocean waters, in removing or killing non-indigenous species.
- Discharge the ballast water to a reception facility approved by the commission.
- Under extraordinary circumstances where compliance with subsections (a)(1) through (a)(4) of this section is not practicable, perform a ballast water exchange within an area agreed to by the commission in consultation with the United States Coast Guard at or before the time of the request.
Article 4.7 – Performance Standards for the Discharge of Ballast Water for Vessels Operating in California Waters: The purpose of Article 4.7 (CCR Title 2, Division3, Chapter 1) is to move the state toward elimination of the discharge of non-indigenous species into the waters of the state. Subject to the implementation schedules identified in Section 2294 of Article 4.7, before discharging ballast water in waters subject to the jurisdiction of California, the operator, or person in charge of a vessel to which this section applies, shall conduct ballast water treatment so that ballast water discharged will contain:

- No detectable living organisms that are greater than 50 micrometers in minimum dimension;
- Less than 0.01 living organisms per milliliter that are less than 50 micrometers in minimum dimension and more than 10 micrometers in minimum dimension;
- For living organisms that are less than 10 micrometers in minimum dimension:
  a. less than 1,000 bacteria per 100 milliliters;
  b. less than 10,000 viruses per 100 milliliters;
  c. concentrations of microbes that are less than:
    i. 126 colony forming units per 100 milliliters of Escherichia coli;
    ii. 33 colony forming units per 100 milliliters of Intestinal enterococci;
    and
    iii. 1 colony forming unit per 100 milliliters or 1 colony forming unit per gram of wet weight of zoological samples of Toxicogenic Vibrio cholerae (serotypes 01 and 0139).

Implementation schedule as follows:

- Beginning January 1, 2010, for vessels constructed on or after that date with a ballast water capacity of less than or equal to 5,000 metric tons.
- Beginning January 1, 2012, for vessels constructed on or after that date with a ballast water capacity greater than 5,000 metric tons.
- Beginning January 1, 2014, for vessels constructed before January 1, 2010, with a ballast water capacity of 1,500 metric tons or more but not more than 5,000 metric tons.
- Beginning January 1, 2016, for vessels constructed before January 1, 2010, with a ballast water capacity of less than 1,500 metric tons, and for vessels constructed before January 1, 2012, with a ballast water capacity greater than 5,000 metric tons.

Article 4.8 – The Collection of Information Relating to Hull Husbandry Practices of Vessels for Control of Marine Invasive Species in Waters of California: Article 4.8 (CCR Title 2, Division3, Chapter 1) requires the owner or person in charge of a vessel carrying, or capable of carrying, ballast water into the coastal waters of the state to file the “Hull Husbandry Reporting Form” developed by the SLC, providing information regarding the hull husbandry practices relating to the vessel, within 60 days of receiving a written or electronic request from the SLC.

State Water Resources Control Board: The SWRCB was created by the Legislature in 1967. The joint authority of water allocation and water quality protection enables the SWRCB to provide comprehensive protection for California’s waters. Upon approval of the EPA’s VGP, the SWRCB adopted additional regulations pertaining to vessel discharge, as allowed by Section
401 of the CWA. This certification can be found in Section 6.4 of the VGP. By certifying the VGP, the SWRCB identified that the following shall be prohibited from entering California waters:

- Hazardous waste or contaminated materials
- Sewage sludge
- Used or spent oil
- Garbage or trash (including plastic)
- Photo-developing waste
- Dry cleaning wastes
- Noxious liquid substance residues
- Medical waste

Further, the State of California requires all ballast water discharges follow the requirements established by the SLC and prohibits hull cleaning of vessels with biocide-based antifouling paints in California impaired waters.

**California Clean Coast Act of 2005:** This statute (PRC 72400) authorizes the SWRCB and the SLC to regulate the release of graywater, sewage treated or untreated, sewage sludge, oily bilgewater, hazardous waste, or other waste by oceangoing ships of 300 gross tons or more, as defined, and by large passenger vessels including cruise ships into the marine waters of the state and marine sanctuaries. Beginning in 2006, large passenger vessels such as cruise ships are prohibited from discharging oily bilgewater, hazardous waste, graywater, other waste like medical, photography and dry cleaning chemicals, and sewage sludge and sewage (treated or untreated) within 3 miles of coastal state marine waters and marine sanctuaries. Oceangoing vessels of 300 gross tons or more are also prohibited from discharging oily bilge water, other waste, hazardous waste, and graywater. For graywater the prohibition only applies if the ship has sufficient holding tank capacity.

**California Department of Fish and Game Code 5650:** Under Fish and Game Code 5650, it is unlawful to deposit in, permit to pass into, or place where it can pass into the waters of California any of the following:

- Any petroleum, acid, coal or oil tar, lampblack, aniline, asphalt, bitumen, or residuary product of petroleum, or carbonaceous material or substance.
- Any refuse, liquid or solid, from any refinery, gas house, tannery, distillery, chemical works, mill, or factory of any kind.
- Any sawdust, shavings, slabs, or edgings.
- Any factory refuse, lime, or slag.
- Any *Cocculus indicus*.
- Any substance or material deleterious to fish, plant life, mammals, or bird life.

**California No Discharge Zone:** On February 9, 2012, the U.S. EPA signed and approved a State of California proposal to ban the discharge of sewage (both treated and untreated) within California waters. This ban creates the largest no discharge zone in the United States. The rule established a no discharge zone (NDZ) for the following vessels within the State of California: all large passenger vessels of 300 gross tons or greater and large oceangoing vessels of 300 gross tons or greater with available holding tank capacity or containing sewage generated while the vessel was outside of the marine waters of the State of California, pursuant to Section

2.3 Local Laws and Regulations

**Port Tariff**: Port Tariffs govern a variety of activities in the port, including vessel operating procedures, fees, wharf and dock usage, and the use of hazardous or polluting substances on or near the water. The tariff contains prohibitions on discharging oil, wastes, waste and bilgewaters, and rubbish into or near Port waters. Because they are enforceable and can set penalties similar to municipal codes, the tariffs give the Port broad powers to regulate activities within its boundaries.

*Port of Long Beach – Tariff No. 4*: The POLB Tariff No. 4 governs a variety of activities that occur within the Long Beach Harbor District. Section 7 identifies the general rules and regulations that apply to activities within the POLB. The following table identifies the rules related to discharges that are allowed and prohibited by the POLB tariff.

<table>
<thead>
<tr>
<th>Item/Rule</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>748 / Discharge of Clean Ballast Water</td>
<td>No ballast water shall be discharged from a vessel within the Harbor District unless the discharge complies with all applicable federal, state, and local rules and regulations. In the event that the discharged ballast water does not follow all applicable rules and regulations, the vessel owner/operator shall be liable for any damage and shall pay all costs of cleanup and remediation imposed by any agency with jurisdiction.</td>
</tr>
<tr>
<td>750 / Discharging Bilge or Foul Ballast Water and Refuse Prohibited</td>
<td>No person shall discharge any treated or untreated bilge or refuse into the waters of the Long Beach Harbor District. If such an activity does occur, it shall be stopped immediately and reported. In the event that the bilge water or refuse is discharged, the vessel owner/operator shall be liable for any damage and shall pay all costs of cleanup and remediation imposed by any agency with jurisdiction.</td>
</tr>
<tr>
<td>751 / On-Water Vessel Maintenance</td>
<td>Any person wishing to conduct on-water vessel maintenance activities, including but not limited to hull maintenance, cleaning (of vessels with non-biocide based paints), and painting, must obtain prior written approval from the Port of Long Beach Tenant Services Section. Any in-water maintenance, cleaning, or painting shall be done in strict compliance with BMPs and shall follow all applicable federal, state, and local regulations. In the event that on-water maintenance results in the discharge of pollutants to the Harbor, the Responsible Parties shall be liable for any damage and shall pay all costs of</td>
</tr>
</tbody>
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Table 3 – POLB Tariff No. 4
### Table 4 – POLA Tariff No. 4

<table>
<thead>
<tr>
<th>Item/Rule</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1870 / Dumping into Navigable Waters</strong></td>
<td>It shall be unlawful to throw, discharge, or deposit, or cause, suffer, or procure to be thrown, discharged, or deposited, either from or out of any vessel, or from the shore, wharf, manufacturing establishment, or mill of any kind, any refuse matter or other substance of any kind or description whatever into the navigable waters of Los Angeles Harbor; and it shall be unlawful to deposit, or cause, suffer, or procure to be deposited material of any kind in any place, or on the bank of any navigable water, where the same shall be liable to be washed into such navigable water, either by ordinary or high tides, or by storms or floods or otherwise, whereby navigation within the limits of Los Angeles Harbor shall or may be impeded or obstructed; provided, that nothing herein contained shall extend to, apply to, or prohibit operations in connection with the improvement of Los Angeles Harbor, or the construction of public works considered necessary and proper by the Board; and provided, further, that nothing herein contained shall extend to, apply to, or prohibit the depositing of any material above mentioned in such navigable waters within such limits as may be defined, and under such conditions as may be prescribed, by the Executive Director or the proper Engineer Officer of the United States Department of Defense.</td>
</tr>
<tr>
<td><strong>1871 / Rubbish and Waste Material</strong></td>
<td>It shall be unlawful to throw, discharge, or deposit, or cause, suffer, or procure to be thrown, discharged, or deposited upon any wharf, landing, thoroughfare, or other premise under the jurisdiction of the Board, any decayed or decaying fruits, fish or vegetables, or the carcass of any dead animal or putrefying matter, or any rubbish or refuse matter of any kind. Upon the neglect, failure or refusal of any person so throwing or depositing any such material mentioned above to immediately remove the same, it shall be the duty of the Executive Director to remove the same at the expense of such person responsible therefor.</td>
</tr>
</tbody>
</table>
| 1873 / Discharging Oil into Water Prohibited | (a) It shall be unlawful for any person to pump, discharge or deposit, or to cause or permit to be pumped, discharged or deposited, or to pass or to allow to pass or to escape in or into the waters of Los Angeles Harbor any of the following materials or substances: oil, spirits, combustible liquids, coal tar, refuse, residuary products of coal, petroleum, asphalt, bitumen, or other carbonaceous materials or substances, or any products or compound of, or any bilge water containing any of said materials or substances; and it shall be unlawful for owners, masters, officers and agents of vessels, terminal operators and others on shore, or any person participating in the transfer of such materials or substances, or products or compounds thereof, or any bilge water containing any of said materials or substances, having knowledge of the pumping, discharging, depositing, passage or escapement of such materials or substances, to fail to report the same immediately to the Harbor Department; and upon discovering such pumping, discharging, depositing, passage or escapement, such owners, masters, officers and agents of vessels, terminal operators and others on shore, or any person participating in the transfer of such materials or substances, shall forthwith confine any such materials or substances and clean up and remove the same from the waters of Los Angeles Harbor.
(b) It shall be unlawful for any person in charge of a marine oil terminal to cause, suffer or permit such terminal to load, discharge, handle or store any petroleum or petroleum products unless not less than 305 lineal meters of workable oil spill booms are available on the premises assigned to the operator of such marine oil terminal pursuant to the provisions of Item No. 1000 of Section Ten hereof; provided, however, that the City reserves the right to grant permission to the person in charge of a marine oil terminal to install an air barrier system of controlling spilled petroleum or petroleum products in lieu of the aforesaid requirement of oil spill booms if such is first approved by the Executive Director.

| 1880 / Regulation of Ballast, Discharge, etc. | It shall be unlawful for any person to pump, discharge or deposit, or to cause or permit to be pumped, discharged or deposited, or to pass or to allow to pass or escape in or into the waters of Los Angeles Harbor any foul bilge water, ballast, slops or refuse without having first obtained written permission so to do from the Executive Director, and the Executive Director may grant such permission subject to such terms and conditions as in his sole discretion may be necessary for the prevention of water pollution, such as, but not limited to, pumping or discharging above the water line so that a visible outfall may be constantly inspected.

### 2.4 International Regulations

**International Convention for the Prevention of Marine Pollution from Ships (MARPOL):**
The International Maritime Organization (IMO), a United Nations group established in 1948 to promote maritime safety, adopted the MARPOL treaty as a reaction to oil spills in international waters. Eventually it was recognized that further measures needed to be addressed regarding pollution of the marine environment by ships from operational or accidental causes. After the
addition of several amendments called “annexes,” as well as the Protocol of 1978 related to oil pollution, the convention now covers pollution by oil, chemicals, packaged harmful substances, sewage, garbage, and air emissions. MARPOL contains requirements for managing the various classes of pollutants onboard vessels. As an example, Annex I (Oil Pollution) specifies how oily ballast and bilgewayaters must be contained and managed and establishes specifications for new construction that include ballast water and oily waste tanks that are separate from the cargo tanks, as well as double-hulled construction for oil tankers. See http://www.imo.org/Conventions/contents.asp?doc_id=678&topic_id=258 for more detail.

IMO Resolution A.928(22): The International Convention on the Control of Harmful Anti-fouling Systems on Ships prohibited the use of harmful organotins in anti-fouling paints used on ships. Beginning on January 1, 2008 (effective date), ships either:

A. shall not bear such compounds on their hulls or external parts or surfaces; or
B. shall bear a coating that forms a barrier to such compounds leaching from the underlying non-compliant anti-fouling systems.

This IMO resolution called for a global prohibition on the application of organotin compounds that act as biocides in anti-fouling systems on ships, including TBT.
SECTION 3: Vessel Discharge, Maintenance, and Best Management Practices

Discharges from ships, harbor craft, recreational vessels, and in-water structures contribute to the Ports’ water pollution. Modern maritime operations involve large vessels that use a variety of potentially toxic materials such as petroleum products, metallic and organic anti-fouling and anti-corrosion substances, and paints; they discharge particulates into the air; and they produce human wastes and refuse. Discharges from ships, whether allowed or prohibited, impact water quality in the Ports. Deck washdown and runoff may contain oil, grease, cleaner or detergent residue, paint chips, metal particles, paint droplets, and general debris, while bilgewater can include oil, grease, volatile and semi-volatile organic compounds, inorganic salts, and metals.

3.1 Best Management Practices

BMPs are environmentally friendly alternatives to common activities that may cause pollution or contamination to the environment. BMPs can be alternative operating methods that prevent pollution or alternative products that can be used to reduce the source of pollution as well as providing employee training. Along with alternative operating methods and products, BMPs may consist of structural changes that can assist an area or operation in reducing the amount of pollution.

In the case of everyday vessel operations and discharges, there is no one BMP that can be followed that has the ability to significantly reduce or eliminate polluted discharge. Often, a combination of many BMPs can provide the best defense against polluted discharge from vessels. While BMP implementation can reduce the potential for polluted discharge to leave the vessel, it does not give a vessel the authority to discharge and does not guarantee compliance with required discharge permits.

3.2 Prohibited Discharges

Section 3.3 identifies some of the discharges that may occur in the Ports. While the discussion of each discharge identifies specific regulations and BMPs, it is important to note that any discharge that contains pollutants or materials that can be harmful to water quality, fish, plant life, mammals, or bird life is a violation and must be terminated immediately (POLB Tariff No. 4, POLA Tariff No. 4, CWA, VGP, Fish and Game Code 5650). Harbor Patrol/Port Police and U.S. Coast Guard must be notified immediately if illicit discharges have occurred.
3.3  Discharge Status and BMPs

3.3.1  Deck Washdown and Runoff

Deck washdown is allowed in the Ports as long as the runoff does not contain any pollutants, including trash, oils, metals, paint, or other debris (POLB Tariff No. 4, POLA Tariff No. 4, VGP Sec. 2.2.1).

Overview:  Deck runoff occurs from all vessels as a result of precipitation and/or deck cleaning. Constituents of deck runoff may include oil, grease, cleaner or detergent residue, paint chips, and general debris (e.g., paper, wire). Discharge rates for deck runoff vary from vessel to vessel and depend on weather, deck machinery, deck operations, and frequency of deck washdowns. Due to the nature of vessel operations, design, and safety, it is not always feasible to hold or treat all deck runoff.

Required Action:  Deck runoff must not contain any visible pollutants or rust. If deck runoff is not clear, the activity must immediately be terminated and reported to Harbor Patrol/Port Police and the U.S. Coast Guard (POLB Tariff No. 4, POLA Tariff No. 4). The following are prohibited from entering Port waters as a result of deck washdown and runoff:

- Refuse, including garbage, deck debris, etc.
- Chemicals, including grease, fuel, hydraulic fluid, caustics, detergents, etc.
- Metals/rust
- Paint droplets or other debris occurring as a result of deck and/or hull cleaning.

Required BMPs:  Under general circumstances, the Ports request that vessel crews not engage in deck washdowns while in port. In the event that such activities are necessary for the safety of the vessel and/or crew, the following BMPs have been identified to minimize the potential for pollutants to reach Port waters (VGP Sec. 2.2.1).

- Clear decks of debris, garbage, cargo residue and spills before:
  - Deck washdowns
  - Entering and leaving port
- When required by the class societies, vessels must be fitted with and use perimeter spill rails and scuppers
- Drip pans used to collect oily water from machinery must be drained to a waste container for proper disposal or periodically wiped and cleaned
- When washing down the deck, use cleaners and detergents that are:
  - Non-toxic
  - Phosphate free
  - Biodegradable
  - Minimally caustic or non-caustic
3.3.2 Above Water Line Hull Cleaning and Painting

Above water hull cleaning and painting is allowed in the Ports but must follow specific BMPs (VGP Sec. 2.2.1, POLB Painting BMPs/Tariff No. 4, POLA). Spray equipment is not allowed for any on-water painting.

Overview: Above water line hull cleaning and associated discharges occur when areas of the hull or other exterior portions of the vessel undergo regular cleaning. Constituents of above water line hull cleaning may include grease, paint chips, paint droplets, and other associated materials.

Required Action: Under general circumstances, the Ports request that vessel crews not engage in above water hull cleaning (those areas above the antifouling coating boundary) or painting while in the Port. In the event that such activities are necessary, the following BMPs must be followed (VGP Sec. 2.2.1, POLB Painting BMPs, POLA). When painting within the Ports, the vessel operator must first contact Terminal Services/Wharfingers. Further, the Ports do not allow the use of spray equipment of any kind for on-water painting. As always, if a spill occurs, immediately stop all activities and contact Harbor Patrol/Port Police and the U.S. Coast Guard.

The POLB shall be notified prior to any above water cleaning or painting to ensure that appropriate BMPs will be used (POLB Tariff No. 4).

Required BMPs: The following BMPs must be followed for maintenance and painting activities. For maintenance cleaning of the hull above the water line (above the antifouling coating boundary), only use soft brushes and ensure that any debris is captured and discarded on-land. Cleaning materials must be non-toxic, biodegradable, and phosphate-free. Pressure washing is not permitted. Discarded material that contains any potentially hazardous materials must be handled appropriately.

The following BMPs must be followed by vessels performing painting activities in the POLB and POLA:

- No spray equipment is to be used.
- Painting shall occur in dry conditions only.
- Perform paint and solvent mixing in a contained location either onshore or on the vessel so that nothing can spill directly into the water or storm drains.
- Store materials such as paints, tools, and ground cloths indoors or in a covered area when not in use.
- Painting to be performed from a proper raft, suspended from the deck of the vessel, designed for the purpose of vessel painting.
- Raft shall be held as tight as possible against the side of the Ship.
- There must be protective canvas overhanging the sides of the raft should any drops fall from the rollers.
- If painting from the wharf, ensure protective canvas is properly installed to contain drips.
- Only one half-full paint drum (10 liters max) will be allowed on the suspended raft.
- Task shall be carried out by fully qualified, experienced, able seamen only.
- Raft personnel shall be in VHF Radio contact with Duty Watchman.
• Spill equipment shall be ready at Ship's bunker station.

Any spillage must be reported immediately to the U.S. Coast Guard on VHF Ch16. Any spillage must also be reported to Harbor Patrol (POLB, 562-590-4185) or Port Police (POLA, 310-732-3515), as appropriate.
3.3.3 Sandblasting

Sandblasting is not allowed on vessels that are in-water (POLB, POLA).

**Overview:** Sandblasting is the operation of forcibly propelling a stream of abrasive material against a surface under high pressure to make it smoother, remove surface contaminants, or roughen it. When the activity occurs on vessels, sandblasting can remove paints, oil, metals, or other pollutants that are prohibited from entering Port waters. Due to the nature of sandblasting, it can be difficult to fully contain the spray and materials being cleaned.

**Required Action:** Sandblasting is not allowed on vessels that are in-water. If sandblasting is required, it must be done in drydock under proper conditions, ensuring that runoff does not enter Port waters.
3.3.4 Propeller Polishing and Other In-water Maintenance

Non-essential propeller polishing or other in-water maintenance should not occur in the Ports (VGP Sec. 2.2.9). Propeller polishing and other in-water maintenance is not recommended or preferred in the Ports, but is allowed assuming all required rules, regulations, BMPs and best available technology, as determined by both the SLC and the SWRCB, are used (SWRCB VGP Certification). For underwater hull cleaning, see section 3.3.12.

Overview: Oil to sea interfaces include any mechanical or other equipment where seals or surfaces may release small quantities of oil to the sea. Examples include controllable pitch propellers (CPPs). CPPs are variably-pitched propeller blades used to change the speed or direction of a vessel and are used in addition to the main propulsion system. Hydraulic oil can leak from CPPs if the protective seals are worn or defective, and large amounts may be discharged during maintenance and repair. Another example includes rudder bearings, which allow a vessel’s rudder to turn freely and can be either grease-, oil-, or water-lubricated.

Required Action: For those vessels in the Ports, non-essential (maintenance not required for the safety of the vessel and/or crew) propeller or in-water maintenance should not occur (VGP Sec. 2.2.9). As adopted by the SWRCB (SWRCB VGP Certification), propeller polishing and maintenance is allowed in the State of California until the biofouling management regulations for vessels are adopted by the SLC and become effective. After the SLC biofouling management regulations become effective, propeller polishing is allowed as specified in that regulation. All other in-water maintenance is not recommended or preferred, but is allowed when the best available technologies, as determined by both the SLC and the SWRCB, are used. For in-water hull cleaning, see section 3.3.12.

The POLB shall be notified prior to any in-water maintenance to ensure that appropriate BMPs will be used (POLB Tariff No. 4).

Recommended BMPs: Regular maintenance is recommended to ensure all parts are in good working order to reduce the potential for leaks. Significant vessel maintenance relating to the propeller and related parts should occur in drydock, where oils cannot be released into the environment. In the event that crew and/or vessel safety is of concern, the following BMPs should be followed to minimize the potential for the release of pollutants.

- Vessel owner/operators must apply lubricants and maintain all seals so that discharges do not result in a visible sheen or are otherwise harmful.
- Before being placed in service, and after periodic lubrication, wire ropes or cables and other equipment must be thoroughly wiped down to remove excess lubricant.
- If maintenance or emergency repair must occur on stern tubes or other oil-to-sea interfaces that have a potential to release oil in quantities that may be harmful as defined in 40 CFR Part 110, appropriate spill response resources (e.g. oil booms) must be used to contain any oil leakage.
  - Operators of the vessel must have ready access to any spill response resources to clean any potential oil spills. If a spill occurs, the responsible party must inform Harbor Patrol/Port Police.
• All vessels must use environmentally acceptable lubricants, such as those that are biodegradable, minimally toxic, and are not bioaccumulating, unless technically infeasible.
  o Use of an environmentally acceptable lubricant does not authorize the discharge of any lubricant in a quantity that may be harmful as defined in 40 CFR Part 110 or cause a visible sheen as these oils still cause many undesirable environmental impacts, though these impacts are potentially less severe than those caused from petroleum-based oils.
  o If use of an environmentally acceptable lubricant is technically infeasible, the vessel owner/operator must document the basis for that determination and report the use of a non-environmentally acceptable lubricant to the EPA in their annual report.
3.3.5 Aqueous Film Forming Foam (AFFF)

The discharge of AFFF within the Ports is allowable only during an emergency (VGP Sec. 2.2.5).

Overview: AFFF is a synthetic firefighting agent consisting of fluorosurfactants and/or fluoroproteins. It serves as an effective firefighting agent by forming an oxygen-excluding barrier over an area. In order to produce AFFF, a concentrated solution of the foam-forming agent is injected into the water stream of a fire hose. Vessels equipped with AFFF equipment must periodically (annually or semi-annually) test the equipment for maintenance, certification, or training purposes resulting in discharge overboard or onto the deck. The constituents of AFFF can vary by manufacturer but can include ingredients that are persistent, bioaccumulative, and nonbiodegradable.

Required Action: Discharges of AFFF within the Ports are allowable only during an emergency (VGP Sec. 2.2.5). If such an emergency discharge occurs, vessel operators shall notify the U.S. Coast Guard, as well as the local fire department and Port Police/Harbor Patrol. An explanation of the emergency and the need to discharge AFFF must be written in the ship’s log or other recordkeeping documentation.

For all vessels that sail outside of the U.S. territorial sea more than once per month, maintenance and training discharges of fluorinated AFFF are not authorized within the Ports. Discharge volumes associated with regulatory certification and inspection must be minimized and a substitute foaming agent (i.e. non-fluorinated) must be used within waters subject to the VGP. If training occurs within the Ports, a substitute foam (non-fluorinated) must be used.

For vessels that do not leave the territorial sea more than once per month, if maintenance and training discharges are required, AFFF must be collected and stored for onshore disposal if technologically feasible. If not feasible, a non-fluorinated substitute shall be used.
3.3.6 Firemain Systems

Discharges from the firemain system are allowed in cases of emergency, when necessary to ensure the safety of the vessel and crew, as well as for testing purposes to ensure the system will be operational in an emergency (VGP Sec. 2.2.12).

Overview: Firemain systems draw in water through the sea chest or potable supplies to supply water for fire hose stations, sprinkler systems, or AFFF distribution stations. Firemain stations can be pressurized or non-pressurized and are often used for secondary purposes onboard vessels (e.g., deck and equipment washdowns, machinery cooling water, ballast tank filling). Firemain water can contain a variety of constituents, including copper, zinc, nickel, aluminum, tin, silver, iron, titanium, and chromium. Many of these constituents can be traced to the corrosion and erosion of the firemain piping system, valves, or pumps.

Required Action: Discharges from the firemain system are allowed in cases of emergency only, when necessary to ensure the safety of the vessel and crew, as well as for certification, maintenance, and training, assuming that the water intake comes directly from the Ports water or from a potable water supply and does not contain AFFF or other additions to the water. However, when feasible, the maintenance and training discharges of the firemain should occur outside the Ports or other shallow waters and outside waters subject to the VGP (VGP Sec. 2.2.12).

Firemains may also be used for deck washdowns and other secondary uses if the intake comes directly from the Ports or potable water supplies. In such an instance, this activity must comply with the requirements identified for the specific activity (See Table 1).
3.3.7 Cathodic Protection

There are no regulations pertaining to specific types of cathodic protection devices.

Overview: Vessels use cathodic protection systems to prevent steel hull or metal structure corrosion. The two types of cathodic protection are sacrificial anodes and impressed current cathodic protection (ICCP). Using the first method, anodes of zinc, magnesium, or aluminum are “sacrificed” to the corrosive forces of the seawater, which creates a flow of electrons to the cathode, thereby preventing the cathode from corroding. These sacrificial metals are then released to the aquatic environment. Using ICCP, a DC electrical current is passed through the hull such that the electrochemical potential of the hull is sufficiently high enough to prevent corrosion. The discharge from either method of cathodic protection is continuous whenever the vessel is waterborne.

Recommended Action: The Ports recommend the use of the ICCP systems as the environmentally preferable method because these systems eliminate or reduce the need for sacrificial anodes. Due to elevated levels of zinc in the Port waters, the elimination of zinc anodes is preferred. However, the use of ICCP may be technologically and economically infeasible (See VGP Sec. 2.2.7).

Recommended BMPs: For sacrificial anode systems, it is recommended that vessel operators select the least toxic anode material that is practicable, in the order of preference of magnesium, then aluminum, then zinc. Sacrificial anodes should be used in conjunction with corrosion control coatings to minimize the release of dissolved metals. Furthermore, sacrificial anodes must not be used more than is necessary to adequately prevent corrosion of the vessel’s hull, sea chest, rudder, and other exposed vessel areas. Vessel operators must appropriately clean and/or replace these anodes in periods of maintenance (such as drydocking), so that release of these metals to waters is minimized. Vessel operators must minimize the flaking of large, corroded portions of these anodes.
3.3.8 Ballast Water

Ballast water shall not be discharged without treatment or exchange (unless for safety purposes) into Port waters unless said ballast water originated in the POLB, POLA, or the El Segundo marine oil terminal (CCR Article 4.6/4.7 of Title 2, Division 3, Chapter 1, PRC 71200, CFR Title 33 Part 151, POLB Tariff No. 4, POLA Tariff No. 4). Discharged ballast water must meet SLC performance standards. Additionally, vessels must comply with applicable federal regulations (VGP 2.2.3).

Overview: Vessels may take on, discharge, or redistribute ballast water during cargo loading and unloading, as they encounter rough seas, or as they transmit through shallow waterways. As ballast is transferred from one distant location to another, so are thousands of organisms that are taken into the tanks along with the water. This process transfers organisms in ways that regular ocean currents would not. These organisms can establish themselves in new locations that have lower interspecies competition or predation and can have severe ecological, economic, and human health impacts in the receiving environment.

In California, ballast water discharge is regulated at the state level by the SLC and at the federal level by the U.S. Coast Guard. In general, the state regulations are stricter than the federal regulations. Regulations in force currently require open ocean exchange of ballast water for vessels that originate beyond the Exclusive Economic Zone or are transiting between west coast ports. The requirement for exchange is waived if the ship has an approved onboard treatment system or does not plan to discharge ballast water. Most ships do not need to discharge ballast water in the Ports because the net weight of cargo is greater on incoming ships than on outgoing ships. Because of this, they are more likely to take on ballast water. Ships are required to maintain a ballast water management plan and log ballast water intake and discharge.

The Ports, in cooperation with the SLC and the U.S. Coast Guard, are participating in a ballast water pilot program looking at the performance of specific treatment systems. There are a handful of experimental treatment systems that have been approved for full scale testing, but no system has been certified for general use.

Required Action: While in the Ports, vessels shall retain all ballast water onboard (POLB Tariff No. 4, POLA Tariff No. 4, SLC). The discharge of ballast water in the Ports is prohibited unless required for the safety of the vessel/crew (safety claim must be documented), or the vessel operator can provide documentation stating that the ballast water is clean and complies with all requirements of the SLC (including the performance standards) and the appropriate federal regulations.

Although the VGP and U.S. Coast Guard have identified ballast water requirements, the SLC has identified specific ballast water performance standards and management requirements that must be followed within California waters, including the Ports. As noted above, SLC performance standards are generally stricter than those identified in the VGP.

For more information, please refer to the SLC’s Marine Invasive Species Program.
**Required BMPs:** The following BMPs are required by the SLC (PRC Sec. 71204).
- Discharge only the minimal amount of ballast water essential to operations.
- Minimize discharge and uptake in marine sanctuaries, marine preserves, marine parks, or coral reefs.
- Minimize or avoid uptake of ballast water in:
  - Areas with known infestations of nonindigenous organisms.
  - Areas near a sewage outfall.
  - Areas for which the master has been informed of the presence of a toxic algal bloom.
  - Areas of poor tidal flushing or high turbidity.
  - Periods of darkness when bottom dwelling organisms may rise up in the water column.
  - Areas where sediments have been disturbed (e.g., near dredging operations).
- Clean ballast tanks regularly in mid-ocean waters or in port or drydock.

In addition, the VGP requires the following ballast water BMPs (see VGP Sec. 2.2.3):
- Avoid the discharge of ballast water into waters subject to this permit that are within or that may directly affect marine sanctuaries, marine preserves, marine parks, shellfish beds, or coral reefs or other waters listed in Appendix G of the VGP.
- Minimize or avoid uptake of ballast water in the following areas and situations:
  - Areas known to have infestations or populations of harmful organisms and pathogens (e.g., algal blooms).
  - Areas near sewage outfalls.
  - Areas near dredging operations.
  - Areas where tidal flushing is poor or when a tidal stream is known to be more turbid.
  - In darkness when bottom dwelling organisms may rise up in the water column.
  - Where propellers may stir up the sediment.
  - Areas with pods of whales, convergence zones, and boundaries of major currents.
- Clean ballast tanks regularly to remove sediments in mid-ocean or under controlled arrangements in port, or at drydock.
- No discharge of sediments from cleaning of ballast tanks is authorized in waters subject to this permit.
- Where feasible, utilize the high sea suction when the clearance is less than 5 meters (approximately 15 feet) to the lower edge of the seachest or the vessel is dockside to reduce sediment intake.
- When feasible and safe, you must use your ballast water pumps instead of gravity draining to empty your ballast water tanks, unless you meet the treatment limits found in Part 2.2.3.5 of the VGP.
- Minimize the discharge of ballast water essential for vessel operations while in waters subject to the VGP.
3.3.9 Chain Locker Effluent

For vessels that leave U.S. waters (i.e. Ports) at least once per month, chain lockers may not be rinsed or pumped out within the Port or any other U.S. water unless required for safety (VGP Sec. 2.2.8). For all other vessels that remain in the Ports, chain locker effluent with visible pollutants must not be discharged into Port waters (POLA Tariff No. 4, POLB Tariff No. 4).

Overview: Chain locker effluent is water that collects in the below-deck storage area during anchor retrieval. A sump collects the liquids and materials that enter the chain locker and discharges it overboard or into the bilge tank. Chain locker effluent can contain marine organisms and residue such as rust, paint chips, grease, and zinc. When an anchor is onboard and not in use, the anchor chain is stored in the chain locker, which is often equipped with a sump that can accumulate marine organisms, as well as residue from the inside of the locker itself, such as rust, paint chips, grease, and zinc. The chain locker sump is emptied either directly overboard or is drained into the bilge tank for later disposal.

Required Action: The anchor chain must be carefully and thoroughly washed down (i.e., more than a cursory rinse) as it is being hauled out of the water to remove sediment and marine organisms at their place of origin. In addition, chain lockers must be cleaned thoroughly during drydocking to eliminate accumulated sediments and any potential accompanying pollutants. For vessels that regularly sail outside Port waters (waters subject to the VGP) at least once per month: If technically feasible, periodically clean, rinse, and/or pump out the space beneath the chain locker prior to entering the Ports (preferably mid-ocean) if the anchor has been lowered into any nearshore waters. Furthermore, for vessels that leave Port waters (waters subject to the VGP) at least once per month, chain lockers may not be rinsed or pumped out in the Ports, unless not emptying them would compromise safety. Such a safety claim must be documented in the vessel’s recordkeeping documentation consistent with Part 4.2 of the VGP (VGP Sec. 2.2.8). For all other vessels that remain within the Ports and do not leave U.S. waters subject to the VGP, discharge of chain locker effluent must not contain any oil or other pollutants (POLB Tariff No. 4, POLA Tariff No. 4).
3.3.10 Seawater Piping Biofoul Prevention

No pesticides or chemicals banned for use in the United States may be discharged into the Ports. This includes any substance or material harmful to fish, plant life, mammals, or bird life (Fish and Game Code 5650). Removal of fouling organisms must not occur in the Ports (VGP Sec. 2.2.20).

Overview: Vessels that utilize seawater cooling systems introduce anti-fouling compounds (e.g., sodium hypochlorite) in their interior piping and component surfaces to inhibit the growth of fouling organisms. These anti-fouling compounds are then typically discharged overboard. To prevent biofouling of seawater cooling systems, small amounts of biocidal substances are sometimes injected near the seawater intakes to prevent biofouling by any organisms that may have been drawn in along with the cooling water. Seawater that has been discharged after being treated with chlorinating substances will contain free chlorine and reaction products (halamines, free bromine, and halogenated organics).

Required Action: Seawater piping biofouling chemicals subject to Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) registration (see 40 CFR 152.15) must be used in accordance with their FIFRA label. No pesticides or chemicals banned for use in the United States may be discharged into the Ports (VGP Sec. 2.2.20). Vessel owner/operators must use the minimum amount of biofouling chemicals needed to keep fouling under control. Discharges within the Ports must not contain any substance or material harmful to fish, plant life, mammals, or birds.

Removal of fouling organisms must not occur in the Ports (VGP Sec. 2.2.20). Vessel owner/operators must remove fouling organisms from seawater piping on a regular basis and dispose of removed substances in accordance with local, state, and federal regulations. Removed fouling organisms shall not be discharged in the Ports, and the EPA recommends that if discharged into waters, they should be discharged more than 50 nm from shore.
3.3.11 Anti-Fouling Leachate from Anti-Fouling Hull Coatings

The application of anti-fouling paint containing TBT or other organotins is prohibited within U.S. and international waters (IMO Resolution A.928(22)). If a vessel has previous hull coatings containing TBT, this coating must be covered by a non-organotin based product prior to entering the Ports (VGP Sec. 2.2.4).

Overview: Vessel hulls are often coated with anti-fouling compounds to prohibit the attachment and growth of aquatic life. Coatings are formulated for different conditions and purposes, and many contain biocides. Those that contain biocides prevent the attachment of aquatic organisms to the hull by continuously leaching substances that are toxic to aquatic life into the surrounding water. While a variety of different ingredients may be used in these compounds, the one most commonly used is copper. Copper can inhibit photosynthesis in plants and interfere with enzyme function in both plants and animals in concentrations as low as 4 μg/l. The Ports are currently impaired due to high levels of copper in the sediment. Additional releases of these substances can be caused by hull cleaning activities, particularly if hulls are cleaned within the first 90 days following application. A second metal-based biocide is organotin-based, typically tributyltin (TBT), which was historically applied to vessel hulls but is now prohibited in U.S. and international waters (IMO Resolution A.928(22)). TBT and other organotins cause deformities in aquatic life, including deformities that disrupt or prevent reproduction. TBT and other organotins are also stable and persistent and resist natural degradation in water bodies.

Required Action: The application of anti-fouling paint containing TBT or other organotins is prohibited. If a vessel has previous hull coatings containing TBT, this coating must be covered by a non-organotin-based product prior to entering the Port (VGP Sec. 2.2.4). This standard is consistent with the 1988 Organotin Anti-fouling Paint Control Act (33 U.S.C. 2403(a)) and the IMO Convention on the Control of Harmful Anti-fouling Systems on Ships, which became active on September 17, 2008.

While the Ports have not identified any specific restrictions on the type of anti-fouling coatings acceptable for use (other than prohibiting organotin based coatings), the VGP has specific requirements for vessels entering port waters due to impairments for copper. When vessels covered by the VGP spend considerable time in the Ports (defined as spending more than 30 days per year), or use either Port as their home port, vessel owner/operators shall consider using anti-fouling coatings that rely on a rapidly biodegradable biocide or another alternative rather than copper-based coatings (VGP Sec. 2.2.4). If after consideration of alternative biocides, vessel operators continue to use copper-based anti-foulant paints, they must document in their recordkeeping documentation how this decision was reached (VGP Sec. 2.2.4).

Required BMPs: The following BMPs are recommended to limit the amount of anti-fouling leachate.

- All anti-fouling hull coatings subject to registration under FIFRA (see 40 CFR 152.15) must be registered, sold or distributed, applied, maintained, and removed in a manner consistent with applicable requirements on the coatings’ FIFRA label.
- For anti-fouling hull coatings not subject to FIFRA registration (i.e., not produced for sale and distribution in the United States), hull coatings must not contain any biocides or
toxic materials banned for use in the United States (including those on EPA’s List of Banned or Severely Restricted Pesticides).

- At the time of initial application or scheduled reapplication of anti-fouling coatings, vessel operators must give consideration, as appropriate for vessel class and vessel operations, to the use of hull coatings with the lowest effective biocide release rates, rapidly biodegradable components (once separated from the hull surface), or non-biocidal alternatives, such as silicone coatings.

- All anti-fouling coatings subject to this permit must meet the requirements of the Clean Hull Act of 2010 (33 U.S.C. §§ 3801 et seq).
3.3.12 Underwater Hull Cleaning/Ship Husbandry Discharges

Underwater hull cleaning, including fouling removal, is prohibited on vessels with biocide-based antifouling coatings and is not recommended or preferred by the Ports on other vessels (SWRCB). Underwater ship husbandry/hull cleaning is allowed on vessels with non-biocide based antifouling coatings assuming all required rules, regulations, and BMPs, as identified by the EPA and the SLC, are followed (CCR Title 2, Division 3, Chapter 1, Article 4.8, SWRCB, VGP Sec. 2.2.23).

Overview: Underwater ship husbandry is grooming, maintenance, and repair activities of hulls or hull appendages completed while the vessel is located in the water, including hull cleaning, hull repair, fiberglass repair, welding, sonar dome repair, non-destructive testing, masker belt repairs, and painting operations. Underwater ship husbandry discharges are considered incidental to the normal operation of a vessel when ships are maintained in proper operating order and the cleaning is done on a reasonable schedule.

Fouling consists of organisms that attach or associate with the submerged portions of hard structures, including ships. These include physically attaching species, as well as mobile organisms that take shelter among attached organisms, such as worms, juvenile crabs, and amphipods (shrimp-like animals). When vessels move from port to port, fouling communities are transported along with their “host” structure. They may be introduced to new environments when they release eggs or young, or when they drop off the vessel. Per guidance from the SWRCB, underwater hull cleaning is prohibited on vessels with biocide-based antifouling coatings in impaired waters of the state, due to the risk of copper or other pollutant loadings into such waters. Therefore, underwater hull cleaning of vessels with biocide-based antifouling paint is prohibited in the Ports. For more information refer to the State Water Boards website at http://www.waterboards.ca.gov/water_issues/programs/beaches/.

Required Action: Underwater hull cleaning in the Ports is prohibited on vessels with biocide-based antifouling coatings (SWRCB). The Ports recommend that underwater hull cleaning on vessels with non-biocide based antifouling coatings not occur while in Port waters. If such activities do occur, the following BMPs, as required by the SLC and the VGP, must be in place (SLC: Title 2, Division 3, Chapter 1, Article 4.8, VGP Sec. 2.2.23).

The POLB shall be notified prior to any in-water maintenance to ensure that appropriate BMPs will be used (POLB Tariff No. 4).

Vessel owners/operators must minimize the transport of attached living organisms when traveling into US waters (Ports) from outside the US economic zone or between Captain of the Port zones.

Required BMPs: The following requirements apply to underwater hull cleaning actions on non-biocide based vessels (VGP Sec. 2.2.23). Whenever possible, rigorous hull-cleaning activities should take place in drydock, or at a land-based facility where the removal of fouling organisms or spent antifouling coatings paint can be contained. Vessel owner/operators who remove
fouling organisms from hulls while the vessel is waterborne must employ methods that minimize the discharge of fouling organisms and anti-fouling hull coatings. These shall include:

- Selection of appropriate cleaning brush or sponge rigidity to minimize removal of anti-fouling coatings and biocide releases into the water column.
- Limiting the use of hard brushes and surfaces to remove hard growth.
- When available and feasible, vacuum control technologies must be used to minimize the release or dispersion of anti-fouling hull coatings and fouling organisms into the water column.

The SLC also has specific rules and standards that must be followed when hull cleaning is permitted. These regulations can be found on the SLCs website under the Marine Invasive Species program (http://www.slc.ca.gov/Regulations/Regulations_Home_Page.html#MarineInvasiveSpecies).
3.3.13 Bilgewater

Bilgewater is prohibited from being discharged into Port waters (POLB Tariff No. 4, POLA Tariff No. 4, MARPOL).

Overview: Bilgewater consists of water and other residue that accumulates in a compartment of the vessel’s hull. The source of bilgewater is typically drainage from interior machinery, engine rooms, and deck drainage. Constituents of bilgewater include seawater, oil, grease, volatile and semi-volatile organic compounds, inorganic salts, and metals.

Required Action: The POLA’s Tariff No. 4 prohibits the discharge of any foul bilgewater or bilgewater containing: oil, spirits, combustible liquids, coal tar, refuse, residuary products of coal, petroleum, asphalt, bitumen, or other carbonaceous materials or substances. If such discharge occurs, it must be reported to the POLA, Port Police, and the U.S. Coast Guard and contained, cleaned up, and removed from the waters of the POLA.

Under POLB’s Tariff No. 4, bilgewater is prohibited from being discharged into the POLB under all circumstances. If bilgewater is found to be discharging into the Port, the action must terminate immediately, and the responsible party must notify Harbor Patrol/Port Police and the U.S. Coast Guard. Under Tariff No. 4, the responsible party must immediately remove, or cause to be removed, the bilgewater to the satisfaction of the Executive Director. If the responsible party does not perform these actions, it will be invoiced for the removal.

In addition, large passenger vessels and oceangoing ships of 300 gross tons or larger found to be discharging bilgewater within waters of the State will be subject to administrative civil liabilities imposed by the SWRCB.

Recommended BMPs: Vessel operators can minimize bilgewater generation by practicing proper maintenance of vessel and equipment. Routine cleaning and maintenance activities associated with vessel equipment and structures are considered to be the normal operation of a vessel. Oily waste from the bilge (after running through an oily-water separator) must be disposed of onshore. Further, all overboard discharges of clean bilgewater (outside of the Ports) must be recorded in an oil record book, a required log that is regularly inspected by the U.S. Coast Guard.
3.3.14 Boiler/Economizer Blowdown

Vessels greater than 400 gross tons that leave the Ports at least once per week cannot discharge within 3 nm of the shore, unless:
- the vessel remains in the Ports for longer than the necessary duration between blowdowns,
- the vessel needs to conduct blowdown immediately before entering drydock, or
- for safety purposes (VGP Sec. 2.2.6).

Overview: Boiler blowdown occurs on vessels with steam propulsion or a steam generator to control anti-corrosion and anti-scaling treatment concentrations and to remove sludge from boiler systems. The blowdown involves releasing a volume of 1 percent –10 percent of water from the boiler system, usually below the waterline. The constituents of boiler blowdown discharge vary according to the types of feedwater treatment used but may include priority pollutants such as antimony, arsenic, cadmium, copper, chromium, lead, nickel, selenium, thallium, zinc, and bis (2-ethylhexyl) phthlate. Discharge volumes are typically less than 300 gallons, but the discharge, which consists of steam, water, and sludge, occurs under high pressure (≤1200 psi) and at a high temperature (>325°F) below the water line.

Required Action: The EPA has specified that vessels greater than 400 gross tons that leave the territorial seas (including the Ports) at least once per week cannot discharge within 3 nm of shore, except when the vessel remains in waters subject to this permit for longer than the necessary duration between blowdowns, the vessel needs to conduct blowdown immediately before entering drydock, or for safety purposes (VGP Sec. 2.2.6).
3.3.15 Elevator Pit Effluent

Discharges of untreated elevator pit effluent are prohibited within Port waters (VGP Sec. 2.2.11, POLA Tariff No. 4, POLB Tariff No. 4).

Overview: Large vessels with multiple decks are often equipped with elevators to facilitate the transportation of maintenance equipment, people, and cargo between decks. A pit at the bottom of the elevator shaft collects liquids and debris from elevator operations and may include oil and hydraulic fluid. Pits can be emptied by gravity draining, discharge using the firemain, transfer to bilgewater systems, or containerized for onshore disposal.

Required Action: Discharges of untreated elevator pit effluent are prohibited within the Ports except in cases of emergency due to its potential to contain oil and other prohibited materials. If discharge does occur during an emergency, Harbor Patrol/Port Police and the U.S. Coast Guard must be notified to determine whether oil was released, and the situation must be documented in the ship’s log or other recordkeeping documentation consistent with Part 4.2 of the VGP.
3.3.16 Gas Turbine Wash Water

Gas turbine washwater must not be directly discharged within the Ports (Fish and Game Code 5650). Washwater should be collected and properly disposed of onshore (VGP Sec. 2.2.14).

**Overview:** Gas turbines are used for propulsion and electricity generation. Occasionally, they must be cleaned to remove byproducts that can accumulate and affect their operation. These byproducts include salts, lubricants, and combustion residuals. The wastewater from the cleaning process may include cleaning compounds as well. Due to the nature of the materials being cleaned, there is a higher probability of heavy metal concentrations.

**Required Action:** Gas turbine washwater must not be directly discharged within the Ports. Where feasible, such washwater should be collected separately and properly disposed of onshore. Under no circumstances may oils, including oily mixtures, from gas turbine washwater be discharged in the Ports (POLA Tariff No. 4, POLB Tariff No. 4).
3.3.17 Motor Gasoline and Compensating Discharge

The discharge of motor gasoline and compensating effluent that comes into contact with oil is prohibited in the Ports (POLA Tariff No. 4, POLB Tariff No. 4).

Overview: Motor gasoline is transported on vessels to operate vehicles and other machinery. As the fuel is used, ambient water can be added to the fuel tanks to replace the weight. This ambient water is discharged when the vessel refills the tanks with gasoline or when maintenance is performed and can contain residual oils. Most vessels are designed not to have motor gasoline and compensating discharge.

Required Action: Motor gasoline and compensating effluent that comes into contact with oil is prohibited from discharge in the Ports (POLA Tariff No. 4, POLB Tariff No. 4). Clean effluent that is free of oil and other pollutants may be discharged in the Ports; however, the Ports and EPA request that vessels minimize the discharge of motor gasoline and compensating effluent while in Port (VGP Sec. 2.2.16). Determination of oil concentration may be measured by EPA Method 1664 or other appropriate method for determination of oil content as accepted by the IMO (e.g. ISO Method 9377) or U.S. Coast Guard. Visual monitoring for an oily sheen can also be used to determine if the discharge may contain oil. If the discharge does contain oil but must be removed from the vessel, the effluent may be discharged to a mobile carrier for proper onshore disposal.

In the event that illicit discharge does occur, Harbor Patrol/Port Police and the U.S. Coast Guard must be contacted immediately.
3.3.18 Welldeck Discharges

Welldeck discharges that contain graywater from smaller vessels shall not be discharged within Port waters except in cases of emergency. Welldeck discharges from washdown of gas turbine engines may not be discharged within the Ports. Welldeck discharges from equipment and vehicle washdowns must be free from garbage and must not contain oil (VGP Sec. 2.2.24, POLB Tariff No. 4, POLA Tariff No. 4, Fish and Game Code 5650).

Overview: The welldeck is a floodable platform used for launching or loading small satellite vessels, vehicles, and cargo. Welldeck discharges may include water from precipitation, welldeck and storage area washdowns, equipment and engine washdowns, and leaks and spills from stored machinery. Potential constituents of welldeck discharges include fresh water, distilled water, firemain water, graywater, air-conditioning condensate, sea-salt residues, paint chips, wood splinters, dirt, sand, organic debris and marine organisms, oil, grease, fuel, detergents, combustion by-products, and lumber treatment chemicals.

Required Action: Welldeck discharges that contain graywater from smaller vessels shall not be discharged within Port waters except in cases of emergency. Welldeck discharges from washdown of gas turbine engines may not be discharged within the Ports. Welldeck discharges from equipment and vehicle washdowns must be free from garbage and must not contain oil (VGP Sec. 2.2.24, POLA Tariff No. 4, POLB Tariff No. 4, Fish and Game Rule 5650).

Required BMPs: Vessel operators shall practice good housekeeping to ensure that no garbage or wastes that can cause a visible sheen are discharged from welldecks. Should these wastes be present, the vessel operator must retain the discharge for onshore disposal.
3.3.19 Exhaust Gas Scrubber Washwater Discharges

Exhaust gas scrubber washwater discharge must not contain oil or toxins (POLA Tariff No. 4, POLB Tariff No. 4). Sludge generated from treating exhaust gas scrubber washwater discharge must not be discharged in the Ports (VGP Sec. 2.2.26, 40 CFR Part 110).

Overview: Exhaust gas scrubber washwater discharge (EGS washwater discharge) occurs as a result of operating or cleaning the exhaust gas cleaning systems (e.g. scrubbers) for marine diesel engines. After the washing solution is returned from the scrubber, the washwater can be treated and discharged overboard, or alternatively, it can be piped to a clean bilgewater tank or other suitable holding tanks. While many of the captured contaminants (sludge) are transferred to the vessel’s sludge tank, the constituents of EGS washwater discharge can include residues of nitrogen oxides, sulfur oxides, and particulate matter emissions captured by the scrubbers. EGS washwater discharge can also contain traces of oil, polycyclic aromatic hydrocarbons, heavy metals, and nitrogen. Depending on the geographic location of the EGS washwater discharge, the pH level and turbidity of the receiving water may be altered.

Required Action: EGS washwater discharge must not contain oil (POLA Tariff No. 4, POLB Tariff No. 4). Sludge generated from exhaust gas scrubber washwater discharge must not be discharged in the Ports (VGP Sec. 2.2.26). All exhaust gas scrubber washwater must meet with pH, PAH, turbidity, and other standards listed in item 2.2.26.1 of the VGP.

Recommended BMPs: In addition, it is recommended that owner/operators of vessels with exhaust gas cleaning systems that result in washwater discharges follow the guidelines set out in Section 10 of the Marine Environmental Protection Committee’s (MEPC) guidelines for exhaust gas cleaning systems, which includes recommended limits for pH, polycyclic aromatic hydrocarbons, turbidity, nitrates, and washwater additives (IMO Resolution MEPC.170 (57)).
3.3.20 Boat Engine Wet Exhaust

Vessel operators are asked to minimize the use of small vessels generating wet exhaust while in the Ports to those activities required for the safety of the vessel and/or crew. Vessel operators are encouraged to consider the use of 4-stroke engines as opposed to 2-stroke engines to reduce wet exhaust (VGP Sec. 2.2.21).

Overview: Wet exhaust can contain nitrogen oxides, sulfur dioxide, hydrocarbons and other organic compounds, carbon monoxide, and particulates.

Required Action: Vessels generating wet exhaust must be maintained in good operating order, well-tuned, and functioning according to manufacturer specifications if available to decrease pollutant contributions to wet exhaust (VGP Sec. 2.2.21). Vessel owner/operators should use low sulfur or alternative fuels for their vessels to reduce the concentration of pollutants in their discharge, if possible.

Vessel operators are encouraged to consider 4-stroke versus 2-stroke engines for vessels generating wet exhaust that are covered under the VGP. Some harbor craft will also be required to follow the California Air Resources Board (CARB) Executive Order R-08-007 to reduce emissions related to harbor craft. This regulation will require the gradual phasing out of specific engine tiers. Refer to the CARB for more information.
3.3.21  Distillation and Reverse Osmosis Brine

Brine from the distillation system and reverse osmosis water that comes in contact with machinery or industrial equipment, toxic or hazardous materials, or wastes shall not be discharged in the Ports (VGP Sec. 2.2.10).

Overview: Discharges of brine can occur from onboard plants that distill seawater or utilize reverse osmosis to generate fresh water. Distillation effluent may be at elevated temperatures and may contain anti-scaling treatment, acidic cleaning compounds, or metals. Reverse osmosis effluent is concentrated brine. Onboard distillation and reverse osmosis systems discharge is essentially concentrated seawater with the same constituents of seawater, including dissolved and suspended solids and metals. Anti-scaling treatments and anti-foaming and acidic cleaning compounds may be injected into the distillation system.

Required Action: Distillation and reverse osmosis brine that has not come in contact with machinery or industrial equipment, toxic or hazardous materials, or wastes may be discharged in the Ports in quantities small enough to allow appropriate dilution. It is recommended that general release should occur where the brine can be appropriately diluted by the receiving water (VGP Sec. 2.2.10). Brine from the distillation and reverse osmosis processes must not contain or come in contact with machinery or industrial equipment, toxic or hazardous materials, or wastes. If brine does become contaminated by such materials, the brine must be pumped out and disposed of properly onshore.
3.3.22 Freshwater Layup

Vessel operators shall minimize the amount of disinfection agents used in freshwater layup to the minimum required to prevent aquatic growth (VGP Sec. 2.2.13).

Overview: Seawater cooling systems condense low-pressure steam from propulsion plant or generator turbines on some vessels. When a vessel is pierside or in port for more than a few days, the main steam plant is shut down, and the condensers do not circulate. This can cause an accumulation of biological growth within the system; consequently, a freshwater layup is carried out by replacing the seawater in the system with potable (in the case of the Ports) waters. The freshwater remains stagnant for two hours before being blown overboard using pressurized air. After this, the condensers are considered flushed and are then refilled for the actual layup. After 21 days, this fillwater is discharged and replaced. This is done on a 30-day cycle thereafter. Freshwater layup discharges residual saltwater, freshwater, tap water, and metals leached from the pipes or machinery into the environment.

Required BMPs: Minimize the amount of disinfection agents used in freshwater layup to the minimum required to prevent aquatic growth (VGP Sec. 2.2.13).
3.3.23 Non-Oily Machinery Wastewater

Non-oily machinery wastewater shall not be discharged in the Ports if it becomes contaminated by oil or any additives that are toxic or bioaccumulative in nature (POLB Tariff No. 4, POLA Tariff No. 4, VGP Sec. 2.2.17).

Overview: Non-oily machinery wastewater systems are intended to keep wastewater from machinery that contains no oil separate from wastewater that has oil content. Vessels can have numerous sources of non-oily machinery wastewater, including distilling plants’ start-up discharge, chilled water condensate drains, fresh and saltwater pump drains, potable water tank overflows, and leaks from propulsion shaft seals. Constituents of non-oily machinery wastewater discharge include a suite of conventional pollutants, metals, and organics. Many of the specific constituents in the discharge can exceed water quality criteria, including copper, nickel, silver, zinc and a collection of nutrients. Mercury also may be present.

Required Action: Non-oily machinery wastewater shall not be discharged in the Ports if it becomes contaminated by oil or any additives that are toxic or bioaccumulative in nature (POLB Tariff No. 4, POLA Tariff No. 4, VGP Sec. 2.2.17). Non-oily machinery wastewater may also be drained to the bilge and treated as such.
3.3.24 Refrigeration and Air Condensate Discharge

Clean condensation discharge is allowed in the Ports (VGP Sec. 2.2.18).

Overview: Condensation from cold refrigeration or evaporator coils of air-conditioning systems drips from the coils and collects in drip troughs that typically channel to a drainage system. Condensate discharge may contain detergents, seawater, food residue, and trace metals.

Required Action: Clean condensation discharge, free of oil or other toxins, is allowed in the Ports. If condensate is discharged, it must not come into contact with oily or toxic materials. To ensure this does not occur, vessel crews must follow good housekeeping procedures on the deck and properly remove any oil or toxic substance on the deck following any spill or leak. Condensation discharge cannot contain any pollutants that could be harmful to water quality (Fish and Game Code 5650).
3.3.25 Seawater Cooling Discharge

When possible, non-contact engine cooling water should be discharged when the vessel is underway so that any thermal impacts are dispersed (VGP Sec. 2.2.19). If it must be discharged in the Ports, the discharge rate shall be reduced to minimize thermal impacts to the Port waters and ensure that the discharge does not contain trace metals or oils. If oils or metals are present, the discharge is prohibited in the Ports (POLB Tariff No. 4, POLA Tariff No. 4).

Overview: Seawater cooling systems use ambient water to absorb the heat from heat exchangers, propulsion systems, and mechanical auxiliary systems. The water is typically circulated through an enclosed system that does not come in direct contact with machinery but still may contain sediment from water intake, traces of hydraulic or lubricating oils, and trace metals leached or eroded from the pipes within the system. Cooling water also can reach high temperatures, with the thermal difference between seawater intake and discharge typically ranging from 5°C to 25°C, with maximum temperatures reaching 140°C.

Required Action: To reduce the production and discharge of seawater cooling overboard discharge, it is recommended that vessel owner/operators use shore-based power when the vessel is in port. Under the Clean Air Action Plan (CAAP), the Ports are working with terminal operators to install shore-side power. Currently, both Ports offer shore-side power at select berths.
3.3.26 Sonar Dome Discharge

The water inside the sonar dome shall not be discharged into the Ports (VGP Sec. 2.2.22).

Overview: Sonar domes are generally found on research vessels. As such, this discharge prohibition applies to a select group of vessels. Water is used to maintain the shape and pressure of domes that house sonar detection, navigation, and ranging equipment. Discharges occur when the water must be drained for maintenance or repair or from the exterior of the sonar dome. Maintenance on the sonar dome, while typically done while a vessel is in drydock, can involve the release of the inner sonar dome water.

Required Action: The water inside the sonar dome shall not be discharged into Port waters (VGP Sec. 2.2.22). Vessel operators should not use biofouling chemicals that are bioaccumulative for the exterior of sonar domes when other viable alternatives are available (VGP Sec. 2.2.22, please see 3.3.11 of this document).
3.3.27 Graywater

Discharge of graywater is prohibited within the Ports from large passenger vessels (i.e. cruise ships) and from those oceangoing vessels 300 gross tons or larger with adequate holding capacity (California Clean Coast Act of 2005 PRC 72400, VGP Sec. 2.2.15). Graywater mixed with sewage cannot be discharged within the Ports.

Overview: Graywater means drainage from dishwasher, showers, baths, sinks, and laundry facilities, but does not include drainage from toilets, urinals, hospitals, or cargo spaces. Graywater can contain high levels of pathogens, nutrients, soaps and detergents, and organics. Untreated graywater is much more likely to cause environmental impact when it is generated in large volumes (i.e., from cruise ships). Some vessels have the capacity to collect and store graywater for later treatment and disposal. Those that do not have graywater holding capacity continuously discharge it. Releasing large volumes of untreated graywater in nearshore environments, such as within the Port, is likely to cause negative environmental impacts. This is because these environments are likely to have higher vessel traffic and, therefore, greater graywater generation and discharge; are more likely to be stressed by other anthropogenic forces; and are likely to have less ability for dilution and assimilative capacity.

Required Action: Discharge of graywater is prohibited within the Ports for those vessels with sufficient onboard holding capacity. Graywater must remain onboard until such vessels are at least 3 nm from the California coast (California Clean Coast Act, PRC 72400, VGP Sec 2.2.15). Vessels that do not travel more than 3 nm from shore shall minimize the discharge of graywater and, provided the vessel has available graywater storage capacity, must dispose of graywater on shore if appropriate facilities are available and such disposal is economically practicable and achievable (VGP Sec. 2.2.15).

For those vessels (excluding cruise ships) that do not have adequate graywater holding capacity, discharge within the Ports must be minimized.

Cruise ships are prohibited from discharging graywater in the Ports, regardless of the vessels holding capacity. Graywater discharge from cruise ships are prohibited within 3 nautical miles of the coast (California Clean Coast Act of 2005, PRC 72400(b)).

Further, the VGP has identified graywater management requirements for large ferries (VGP Sec. 5). These requirements (see below) apply to ferries (without overnight berths) that do not travel more than 3 nm from the California coast or do not have holding capacity (California Clean Coast Act of 2005, VGP Sec. 5).

Required BMPs: The following BMPs apply to all vessels capable of generating graywater (VGP Sec. 2.2.15). These BMPs are designed to reduce the impact graywater has on the marine environment.

- The introduction of kitchen oils must be minimized to the graywater system. When cleaning dishes, you must remove as much food and oil residue as practicable before rinsing dishes. Oils used in cooking shall not be added to the graywater system. Oil
from the galley and scullery shall not be discharged in quantities that may be harmful as defined in 40 CFR Part 110.

- Vessel owner/operators must use phosphate-free and non-toxic soaps and detergents for any purpose if they will be discharged into the Ports. These detergents must be free from toxic or bioaccumulative compounds and not lead to extreme shifts in receiving water pH.
- With the exception of cruise ships and oceangoing ships 300 gross tons or larger that have adequate holding tank capacity which are already prohibited from discharging graywater, all other vessels must minimize the discharge of graywater while in port.
  - For those vessels that cannot store graywater, the owner or operator and their crews should minimize the production of graywater in port.

**Cruise Ships**
Refer to section 5 of the VGP for cruise ship rules and regulations (pierside limits, operational limits).

**Large Ferries**
Large Ferry means a ferry that: a) has a capacity greater than or equal to 100 tons of cargo, e.g., for cars, trucks, trains, or other land-based transportation, or b) is authorized by the U.S. Coast Guard to carry 250 or more people (without overnight berths). Large ferries authorized by the U.S. Coast Guard to carry 250 or more people must meet the requirements of section 5.3.2.2 of the VGP (Graywater management). The following applies to large ferries that do not have adequate graywater holding capacity.

**Pierside Limits:** While pierside, appropriate reception facilities for graywater must be used, if reasonably available. If such facilities are not reasonably available, graywater must be held if the vessel has the holding capacity, and the effluent must be discharged while the vessel is underway. Appropriate reception facilities are those authorized for use by the port authority or municipality and that treat the discharge in accordance with its NPDES permit.

**Operational Limits:**
If operating within 3 nm from shore, discharges of graywater must be released while the ferry is sailing at a speed of at least 6 knots, if feasible.

Please refer to section 5 of the VGP for all regulations relating to ferry requirements.
3.3.28  Sewage

The discharge of sewage (treated or untreated) is prohibited within the Ports (California No Discharge Zone). Graywater mixed with sewage cannot be discharged within the Ports.

Overview: Human sewage (blackwater) discharged from vessels contains bacteria, chemicals and nutrients that can degrade local water and can overload confined, poorly flushed waterways. Vessel sewage carries microorganisms that can contaminate water and sediment, leading to unsafe levels of bacteria. Further, sewage can also contain chemical products used in onboard marine sanitation devices (MSDs), such as chlorine and formaldehyde. The State of California applied for and received approval to establish a statewide No Discharge Zone for sewage. As such, the discharge of sewage, whether treated or untreated, is prohibited within California waters (including the POLB and the POLA). This rule prohibits sewage discharge from the following vessels: all large passenger vessels of 300 gross tons or greater and large oceangoing vessels of 300 gross tons or greater with available holding tank capacity or containing sewage generated while the vessel was outside of the marine waters of the State of California.

Required Action: The discharge of sewage in the Ports is prohibited (California No Discharge Zone) for passenger vessels of 300 gross tons and oceangoing vessels of 300 gross tons with holding tank capacity or containing sewage generated while the vessel was outside of California marine waters.
3.3.29 Fish Hold Effluent

All reasonable steps must be taken to prevent the discharge of excess fish hold water and ice while the vessel is stationary at the pier (VGP 2.2.27).

Overview: Fish hold effluent is composed of seawater, ice-melt, or ice slurry collected inside fish hold tanks. Fish hold effluent contains pollutants which result from seafood catch and other on-board vessel sources. These pollutants can include biological wastes, metals, nutrients, and wastewater resulting from fish hold cleaning activities. For vessels with refrigerated seawater tanks, fish are typically extracted using a vacuum system that removes both the fish and refrigerated seawater simultaneously. Any excess refrigerated seawater that is not required to assist in fish extraction is typically pumped overboard. Vessels that use chipped or slurry ice generally remove the seafood and then discharge the spent ice overboard. Tanks used to keep lobster and crab catch alive pump surrounding water into the tank constantly to maintain the highest water quality possible. The flow rate through these systems results in a nearly continuous discharge of fish hold effluent.

Required Action: The discharge of excess fish hold water and ice while the vessel is stationary at the pier is not recommended. If large solid pieces of fish waste are contained in the fish hold effluent, (e.g., fish heads, internal organs) the fish hold effluent may not be discharged in the Ports (VGP 2.2.27, POLA Tariff No. 4, POLB Tariff No. 4). Solid fish waste must be disposed of shore-side or at sea (not in Port waters). If unloading a catch at a shore-based seafood processor or other pier and a shore-based discharge facility is available and economically achievable, effluent must be discharged to the shore-side facility instead of the Port waters (VGP 2.2.27).
SECTION 4: References

Environmental Protection Agency. 2009. Vessel General Permit for Discharges Incidental to the Normal Operation of Vessels.

Environmental Protection Agency. 2013. Vessel General Permit for Discharges Incidental to the Normal Operation of Vessels.