

# Attachment A

## Port of San Francisco Port-Wide Maintenance Manual

**Port of San Francisco**  
**Port-wide Maintenance Manual**  
**April 2016**

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Table 1 – Summary of Avoidance & Minimization Measures and Best Management Practices

Appendix A – California Stormwater Quality Association Best Management Practices

Appendix B – Port of San Francisco Hazard Communication Program

Appendix C - Port of San Francisco Hazardous Materials Emergency Response Plan

## 1. Purpose

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This Maintenance Manual (Manual) describes the operations of the Port of San Francisco (Port) under its proposed five-year Port Maintenance Program (Program). It documents the maintenance and repair activities to be performed and best management practices (BMPs) that will be implemented to protect water quality and avoid environmental impacts in conducting the proposed Program, including means, methods and materials that will be used. This Manual has been prepared to support the Port's applications to the Army Corps of Engineers (Corps or USACE) for a regional general permit and the San Francisco Bay Regional Water Quality Control Board (Water Board) for 401 Water Quality Certification and Waste Discharge Requirements.

The Program of maintenance work described in this manual is generally limited to activities that would be covered by existing USACE Nationwide Permit #3 for repair, rehabilitation, or replacement of any previously authorized, currently serviceable structure or fill. The proposed Port-wide maintenance activities would be performed in accordance with procedures that have been determined by the Army Corps and National Marine Fisheries Service to be "not likely to adversely affect" special status species and habitats<sup>1</sup>.

The scope of maintenance work proposed for authorization by general permits is limited to:

- The structure or fill [to be altered] is not to be put to uses differing from those specified or contemplated in the original construction. Minor deviations, including those due to changes in materials, techniques, standards, or regulatory requirements, are authorized.
- The repair, rehabilitation or replacement of structures or fill destroyed or damaged by discrete events (such as storms, floods, fire, etc.) is commenced or is under contract to commence within two years of the damaging event (unless this two-year limit is waived by the District Engineer of the Corps);
- No temporary fill material is placed in a manner that will be eroded by normal or expected high flow; and
- Temporary fill is removed in its entirety and the affected area returned to pre-construction elevations (and revegetated, as appropriate).

No work within the existing wetland habitat areas at the Port (Heron's Head Park and Pier 94) is anticipated to be conducted under the subject maintenance and repair program. No other habitats of concern or special aquatic sites occur within the project area.

## 2. Responsibilities and Lines of Authority

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The Port Maintenance Division, including the Deputy Director and Superintendents, is responsible for planning and implementing maintenance work that is the subject of this Manual. The Port's engineering, environmental, and planning staff will play a supportive role to ensure that all work is in accordance with the procedures described in this Maintenance Manual and in compliance with all applicable Port and other regulatory requirements and permit conditions.

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<sup>1</sup> NMFS, 2013

Port staff charged with responsibility for conducting work in accordance with the Maintenance Manual and related permits and authorizations include:

DIVISION / Position	FUNCTION
<b>MAINTENANCE</b>	
<b>Deputy Director</b>	Port's primary point of contact for maintenance activities
Safety Officer	Ensure that activities are implemented according to OSHA standards and other environmental health and safety requirements.
Industrial Hygienist	Ensures that activities are implemented according to OSHA standards and other environmental health and safety requirements.
Superintendents (x2)	Manage the various trades or "shops" (e.g. pile-workers, plumbers, divers, crane operators, etc.) who perform the Port-wide maintenance work. The Superintendents are responsible for understanding the requirements and best management practices that apply to the shops under their supervision, and for ensuring that individual shop Supervisors and line staff have the training and resources required to conduct their work safely and in compliance with environmental and other project specifications.
<b>PLANNING &amp; DEVELOPMENT</b>	
<b>Deputy Director</b>	Manages Port staff responsible for environmental planning and review in support of Engineering Division Project Managers.
Assistant Deputy Director - Planning	Coordination and planning for CEQA and BCDC reviews and approvals.
Planner, Historic Resources Specialist	Compliance with Secretary of Interior Standards for Historic Rehabilitation
<b>ENGINEERING</b>	
<b>Chief Harbor Engineer</b>	Manages Port's Engineering Division, including Engineers responsible for design and permitting Port construction and maintenance projects.
Environmental Planner, Engineering Division	Serves as the Engineering and Maintenance Divisions' environmental manager, responsible for evaluating maintenance and new construction projects to identify environmental conditions and applicable requirements; obtain environmental permits and approvals; train Maintenance staff regarding environmental regulatory requirements and environmental protection measures; provide oversight and compliance assistance to ensure compliance with permit conditions; and support Maintenance Division staff in reporting maintenance plans and completed activities.
Chief Building Official	Manages Building Permit Group, including issuing permits in compliance with applicable Port Building Code and other regulatory requirements.

### 3. Maintenance Activities

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This section describes the procedures and activity-specific measures to avoid or minimize environmental impacts and protect water quality that are incorporated into the Port's standard procedures, identified in this section as BMPs. **Table 1** provides a list of general and activity-specific BMPs that are part of the Port's routine operations, and are referenced by BMP # in this manual. **Appendix A** provides activity-specific guidance from the California Stormwater Quality Association (CASQA) that are referenced in the text by CASQA's alphanumeric BMP identifiers.

#### **3.1 Removal of Dilapidated Structures**

Removal of dilapidated structures and debris is generally conducted using marine based equipment. When demolition and removal is performed on or adjacent to a barge or pier deck, Port staff constructs a containment basin of steel and/or durable plastic sheeting with sidewalls supported by hay bales or other structures. Wood piles, deck elements and other debris are placed within the containment basin to prevent debris and sediment from entering the water (**BMP #6**).

**3.1.1 Pile Removal:** Piles will be pulled out directly using a barge mounted crane, or vibrated out using a vibratory hammer.

**Direct pull:** To pull piles directly, the pile is wrapped with a rigging strap or choker cable or chain that is attached at the top to a crane. The crane pulls the piling directly upward, removing the piling from the sediment. Because piles that are being removed are typically in severely degraded condition, those removed by direct pulling generally break a few feet below the mudline as the friction from contact with deeper sediment exceeds the structural integrity of the pile. Crane operators are trained to remove piles from sediment slowly to minimize sediment disturbance and turbidity (**BMP #10**).

**Vibratory extraction:** The vibratory hammer is a large mechanical device (5-16 tons) that is suspended from a crane by cables. When used to remove piles, the vibration is activated to loosen the pile from the surrounding sediment and vibrating continues as the piling is pulled up. Vibratory extraction takes approximately 15 to 30 minutes per pile depending on pile length and sediment condition, and is the preferred method of pile removal (**BMP #1, BMP #10**). The hammer is shut off when the end of the piling reaches the mud line. The friction between the pile and surrounding sediment often results in breaking pile below the mudline as it is removed.

**Clamshell removal:** Broken and damaged pilings that cannot be removed by either the vibratory hammer or direct pull are removed with either a clamshell bucket or environmental clamshell. A clamshell is a hinged steel apparatus that operates like a set of steel jaws. An environmental clamshell bucket includes overlapping sides, rubber seals, and other features designed to minimize release of sediment. To remove piles, either type of clamshell bucket is lowered from a crane or the jaws grasp the piling stub as the crane pulls up. The size of the bucket is minimized to reduce turbidity during piling removal. The clamshell bucket is emptied of material onto a contained area on a barge before it is lowered again into the water.

**Pile Cutting:** When cutting piles, priority is placed on employee safety and minimizing sediment disturbance. If a pile breaks near or above the sediment surface during pile removal, it may subsequently be cut using a clamshell bucket or chain to remove as much of the pile as possible from the water column and shallow sediment. In deep sub tidal areas, if the piling is broken off below mud line greater than one foot, the piling may remain in place. In intertidal and shallow sub tidal areas, the Port endeavors to cut piles at least two feet below the mud line if it is accidentally broken off during removal.

If the entire pile cannot be removed, the pile will be cut by an excavator or clamshell bucket at or below the mudline. Piles cut by chain or clamshell below the mud line shall be cut off at lowest practical tide condition and at slack water. This is intended to reduce turbidity due to reduced flow and short water column through which pile must be withdrawn (**BMP #10**).

If piles are in an area that cannot be accessed by an excavator or clamshell bucket (e.g. replacing individual piles through an existing deck) then the pile may snap below the mudline during removal or be cut at the mud line by using a hydraulic underwater chainsaw.

If manual cutting by a diver working underwater is required, removing the pile below the mudline is not recommended because it increases sediment disturbance and poses increased risk to employees. To access the pile below the mudline, a diver must use air or water to jet the sediment surface, which generates significant turbidity, extending a substantial distance from the pile, and poses a serious safety hazard to the diver because jetting can rapidly and forcefully dislodge large, sharp and unseen objects propelled forcefully in the immediate vicinity of the worker.

Extracted piles removed by any method are placed safely and expeditiously into a containment area to avoid dropping adhered sediment in the water. Sediments spilled on work surfaces are contained and disposed with at an appropriate upland disposal site. Holes remaining after piling removal are left to fill in through natural sediment settlement and deposition. Extracted piles with attached sediment are not shaken, hosed off, or hung over water to drip; such piles are moved expeditiously to a contained area prior removing adhered material.

**3.1.2 Pier Decks** Pier decks will be removed using an excavator mounted on a derrick barge with a crane. Where asphalt-paved decks are removed, as much asphalt as possible will be removed from the pier deck prior to demolition of underlying wood structure to minimize potential for debris to fall to the water (**BMP #6**). In some cases, where there is severe deterioration it is not safe to bring construction equipment onto the pier deck to remove asphalt surface.

To remove asphalt decking, the asphalt is saw-cut to required depth. A jack hammer may be used as necessary to break up asphalt into manageable pieces. Asphalt is removed with backhoe/loader or bobcat and placed into a container. Asphalt (as well as concrete and metal) are used or recycled to the extent feasible. Material that is unsuitable for reuse or recycling will be disposed at an approved facility. The remaining deck is swept and/or vacuumed using a trailer-mounted vacuor to remove fines and small pieces of asphalt debris (**BMP #6, #7**). Where there

are rail tracks in asphalt decks, the track is cut into manageable lengths, removed using a barge mounted crane and placed on a debris barge or forklift on deck, and transported by flatbed truck.

During demolition and removal of wood decking and supporting substructure, wood elements are cut into manageable pieces, removed using a barge mounted crane, placed on a debris barge or forklift from deck, and placed into a container or dump truck for disposal at an appropriate off-site disposal facility. During these activities, Port crews or contractors follow debris capture measures as described in Section 4.1 Debris Capture and Containment.

**3.1.3 Debris Removal:** Debris will be removed using land-based or barge mounted excavator or crane. Work will be done during low tides and the machines will pick up debris carefully so as not to scrape or grade the shoreline (**BMP #5**). Equipment operators will place the debris on a barge with runoff and debris containment along its perimeter (**CASQA BMP NS14**). Debris will be placed onto material barges and disposed directly or moved to a storage yard until a reuse has been determined. In accordance with local requirements<sup>2</sup>, concrete, asphalt and metal debris will be reused or recycled to the extent feasible (at least 75%). Material that is unsuitable for reuse or recycling will be disposed at an approved facility.

**3.1.4 Disposal:** Piles, wood deck elements, and other construction or demolition debris is placed on debris barge and transported to bins (segregated by waste type) at the job site or the Port's maintenance yard prior to off-site recycling or disposal. Piling and wood deck elements are cut into 4' lengths with standard chainsaw. All sawdust and cuttings shall be contained in the containment area. Cut up piling, wood, sediment, plastic sheeting from containment basin, and other debris from demolition will be packed into a container and disposed of at approved solid waste disposal facility (**BMP #6**).

### **3.2 Repair of Piers and Related Structures**

The maintenance and reconfiguration of existing piers, aprons, wharves, fenders, dolphins, whalers, and under-pier structures such as joists, stringers, and pipelines/utilities attached to pier under decks, and minor coring of pier decks to install related structures will occur as needed. These maintenance activities are limited to removal or reconfiguration of existing facilities; the activities specified in this Maintenance Manual do not include new construction, which would be subject to project-specific requirements. Most of the repair work involves structures that are over, not in jurisdictional waters. Therefore, the only potential discharge of fill would be accidental release of construction-related material.

Repair of piers and related structures will be conducted using either land-based or marine-based equipment as described above with respect to demolition and removal. Under-pier pipelines will be repaired and maintained by a small team of plumbers and boat operators working in small skiffs or work boats using manual plumbing tools. Work on under-pier utilities is performed in accordance with the Port's lock-out/tag-out program, which specifies that flow to the pipeline will be shut off at the source before the start of work to prevent release of water or wastewater. Due to the height constraints of working under piers, work hours for under-pier work are limited

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<sup>2</sup> San Francisco Environment Code Chapter 14 – Construction and Demolition Debris Recovery Ordinance



by tide stage: the boat must be close enough to the underside of the pier to reach the pipelines, but not dangerously close.

Materials used for pier maintenance and repair will include energy-absorbing fendering (typically wood or plastic), wood framing, asphalt, steel and concrete. Pier decking will generally be repaired/replaced with the same material as existing (mostly wood, usually with concrete or asphalt surface) although alternative materials (e.g. concrete) may be used where the size or configuration of the repair allows (**BMP #11**).

### **3.3 Dock Replacement**

Docking facilities will be repaired, maintained and replaced using marine based equipment as is used for other tasks. Dock modules are generally fabricated off site before being placed on a barge and towed to the location where they will be installed. The sections will then be assembled, moved into place, and bolted around the piles. Specific installation methods depend on float type, framing system (structural internal members), location of pile hoops, and equipment availability among other factors.

Gangways will be placed into position and attached with the aid of a barge-mounted crane. Gangways may be installed perpendicular or parallel to the pier or seawall. For the perpendicular connection, a simple drop link hinge connection to the pier or seawall is used. A parallel connection typically requires an external platform measuring approximately five feet square. In most cases the abutment connections can be installed from the landside. At pier locations, this platform will be designed as a cantilevered connection to the pier face with sufficient strength to support the gangway for both dead and live loads.

Floating docks and gangways will be made of concrete, aluminum, or lighter-duty timber pre-cast sections. Light-transmitting materials or construction to reduce over-water shading will be used or considered whenever feasible to reduce potential effects from shading (**BMP #11**).

### **3.4 Pile Replacement**

The majority of existing piles for which the maintenance and repair is proposed are PVC-wrapped, preservative-treated (typically ACZA or similar) Douglas fir. Wrapped, treated Douglas fir piles can last over thirty years in salt water and are capable of absorbing ship impact energy without breaking. The Port periodically inspects its structures, including bearing and fender piles, and replaces piles or pile wraps as required. Wherever feasible, such as when a substantial contiguous area of pier deck and associated piles is replaced, the Port will use alternative materials to treated wood (i.e. steel, concrete, or composite) piles. However, when a limited number of piles require replacement without removal of the associated deck and substructure, in-kind replacement of dilapidated piles with piles of the same material is the only feasible alternative.

Piles to be replaced will be removed as described in Section 3.1 above. New piles will be driven using either a land-based or barge-mounted pile driver. A vibratory hammer will be used to the greatest extent possible to minimize hydroacoustic impacts (**BMP #1**). An impact hammer may be needed to finish pile driving and achieve the final required depth. The impact hammer (3,000

lbs. or less) will be equipped with a 12” thick wooden cushion block, and would employ a “soft start” technique (**BMP #1**), which allows fish and marine mammals to leave the area before hydroacoustic impacts increase. Using the “soft start” technique, pile worker initiate noise from vibratory hammers for 15 seconds at reduced energy, followed by a 1-minute waiting period. This procedure is repeated two additional times. If an impact hammer is to be used, pile workers apply an initial set of three strikes from the impact hammer at 40 percent energy, followed by a 1-minute waiting period, then to repeat two subsequent 3-strike sets.

Materials used in pile replacement and repair will include wood piles (typically 12-inch diameter), pile wrap composed of polyvinyl chloride (PVC), wood pile stubs and cylindrical steel connectors. After installation, divers attach a high density polyethylene wrap around the pile to protect the pile from impact or other physical damage, reduce ongoing exposure of chemically-treated wood surface to the environment, protect the piles from boring marine organisms, and prolong the useful life of the pile (**BMP #11**). When installing pile-wrap, divers may use a vacuum eductor which extracts sediment from around the base of the pile at low velocity to minimize sediment disturbance while enabling pile-wrap to be installed below the mudline.

### **3.5 Bank Stabilization**

Banks, seawalls, and other shoreline protection will be maintained using either land-based equipment, such as excavators and front end loaders, or marine equipment, either a barge mounted excavator or derrick barge. Bank stabilization materials generally include rip-rap and concrete. When maintaining existing armored embankments, work will be done during low tide to the greatest extent possible to minimize potential for sediment discharge to bay water (**BMP #5**).

### **3.6 Bulkhead and Breakwater Repair**

Repair and maintenance of bulkheads and breakwaters will be performed using marine-based equipment. Materials will include wood framing, reinforcing steel, and concrete.

### **3.7 Bollard and Crane Repair**

Maintenance of existing equipment and structures on listed above is generally accomplished using standard tools and equipment and working from the pier deck.

### **3.8 Restoration of Navigational Aids and Markers**

The Port-wide maintenance program may include repair, replacement or installation of new navigational aids and markers. These are generally floating devices composed of materials that will not disintegrate such as concrete, steel, plastic’ or closed cell foam encapsulated sun resistant polyethylene (**BMP #11**).

### **3.9 Fence Repair**

Fencing repair and maintenance will be performed from the land by the appropriate craft (e.g. laborers, ironworkers) using pneumatic and welding tools. Fences are composed of wood, aluminum, or steel.

## **4. General Best Management Practices (BMPs)**

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This section describes general BMPs that are implemented in all Port maintenance activities in addition to task-specific measures.

### **4.1 Seasonal Restrictions**

Activities that have potential to create significant underwater noise (e.g. pile-driving with impact hammer) or create turbidity or disturb the seabed for more than three days (e.g. bank stabilization and bulkhead repair) will only be conducted during the designated work windows from June 1- November 30.

If any work poses potential to disturb nesting birds protected by the Migratory Bird Treaty Act during nesting season (generally April through August), Port staff or qualified consultant will inspect the work area for nesting activity and work will be scheduled to avoid potential to impact active nests.

If any in-water work is performed during the Pacific herring spawning or hatching season (December 1 – February 28), a CDFW approved herring monitor will monitor the project site daily, and at any time when in-water construction activity are taking place. In the event that the on-site monitor detects herring spawning at, or within 200 meters of in-water construction activity, the in-water construction activity will be shut down for a minimum of 14 days, or until the monitor determines that the hatch has been completed and larval herring have left the site. The in-water or other construction activity may resume thereafter.

### **4.2 Debris Capture and Containment**

During work in or over water, Port staff will deploy a floating debris boom around the work area to capture floating debris. Crew in a small work boat navigate around the work site removing fallen debris from the water and collecting material contained within the floating boom. The work boat carries absorbent pads to contain any oil sheens and may also deploy oil-absorbent boom within the debris boom as needed. Debris and any used absorbent are collected, contained, and disposed at an appropriate off-site facility. ([CASQA BMP NS-15](#)).

### **4.3 Solid Waste Management**

Solid waste generated by maintenance and repair activities includes construction and demolition debris, concrete rubble, timber, asphalt and general waste. Port operations are governed by the

City and County of San Francisco Environmental Code, which requires collection and segregation of construction and demolition debris in order to achieve a minimum of 75% diversion from landfill disposal to re-use or recycling. Port staff will collect solid waste and litter at the work site and contain it in covered containers that are removed from the work site on a regular basis to prevent accumulation of debris ([CASQA BMP WM-5](#)). Dumpsters or other waste containers are transported back to the Port's maintenance yard for consolidation and subsequent transport for recycling or disposal. Waste containers are never cleaned out at the work site; such equipment is cleaned at a dedicated wash rack, connected to the municipal sewer system, at the Port's central maintenance facility.

#### **4.4 Hazardous Materials**

**4.4.1 Hazardous Materials Used in Maintenance:** The Port has developed a comprehensive Hazard Communication Program which includes container labeling and other forms of warning, Material Safety Data Sheets and employee training. A copy of the Port's Hazard Communication Program is provided as **Appendix B**. Best Management Practices for materials use and storage are also specified by [CASQA WM1 & WM2](#) in **Appendix A**.

In conducting routine maintenance activities Port staff use paints, solvents, sealants, adhesives, fuel and oil. Diesel fuel for the pile-driver engines is contained within a double-walled fuel tank; additional fuel for diesel-powered equipment is stored in a secondarily contained 55-gallon drum on the pile-driving barge. Port staff is trained in the proper use of materials used in the course of their work. The Port's Industrial Hygienist maintains Material Safety Data Sheets for all materials used or stored at the Port's maintenance facility or used at work sites on Port property. ([CASQA BMP NS14](#)).

Small quantities of hazardous materials needed for a particular task are transported to/from the work site in original containers or in "secondary containers" and used within the work day. Secondary containers used to transfer smaller amounts of material to a job site must be labeled with an extra copy of the manufacturers' label or with a properly filled out generic label that provides sufficient information to ensure proper identification and handling of the material as described in the Hazard Communication Program.

Where hazardous materials are being used near water, Port staff will keep absorbent pads and a spill kit readily accessible ([CASQA BMP NS14](#)). Unused hazardous material is returned to the Port's maintenance facility for future use or disposed of in accordance with instructions on the container. Empty containers will be disposed of properly according to the instructions on the container.

Tools and equipment used to apply and transport hazardous materials during the course of maintenance at work sites Port-side will only be drained back into the original container or at the Port's central maintenance facility. With the exception of barge and deck-mounted cranes (see 4.8 – Fueling) Port vehicles and equipment are fueled, serviced, and washed at the City and County of San Francisco Central Shop, at the Port's maintenance facility, or at a commercial service provider ([CASQA BMPs NS8 & NS9](#)). Such activities are not performed at work sites where Port staff are conducting the repair and maintenance activities that are the subject of this manual and proposed for authorization under Port-wide general permits.

**4.4.2 Hazardous Waste:** Hazardous waste that may be generated by maintenance activities include used oil, waste paint, creosote-treated wood debris. Hazardous waste will be identified, labeled, handled, stored and disposed of in accordance with all Federal, State and local regulations.

#### **4.5 Treated Wood**

The Port implements applicable standards and guidelines for use of preservative-treated wood in salt water to reduce the release of wood preservative to water (**BMP #11**). Avoiding wood that has had preservative applied in excess of the retention rate for the type of wood and preservative compound is the best way to reduce discharge of chemical preservative into the environment. The Port purchases wood that is treated with the minimum amount of preservative recommended by industry standards<sup>3</sup> for the type of wood and setting (e.g. Douglas fir, immersed in or used in structures above salt water).

The Port also follows NMFS guidance regarding use of treated wood<sup>4</sup>, including ensuring that to the greatest extent possible treated wood is not cut over water and that cutting and application of preservative to exposed cuts is done indoors or well away from water before wood is taken to the over water area for installation to minimize the potential for dropping sawdust or preservative into water (**BMP #11**). In the event that cutting treated wood over water cannot be avoided, Port staff position a drip pan or other containment to capture any sawdust, wood chips, or drips from applied preservative.

#### **4.6 Spill Prevention & Response**

In addition to the Hazard Communication Program training, all Port Maintenance employees working in the field are trained in hazardous materials emergency response. Most are certified as 24-hour Oil Spill Technicians under the Hazardous Waste Operations standard specified by 29CFR1910.120(q)(6)(iii), with annual 8-hour refresher training. Employees are also trained annually to perform limited emergency spill response at Port-operated facilities. An example of a Port Hazardous Materials Emergency Response Plan, for the Port's primary maintenance facility at Pier 50, is provided as **Appendix C**.

#### **4.7 Stormwater**

All Port Maintenance employees are trained annually on stormwater pollution prevention, including the following topics:

- Allowed non-stormwater discharges: fire hydrant flushing, condensate from refrigeration, air conditioning and compressors, irrigation and landscape water.
- Illicit discharges: wash water from vehicle or equipment cleaning, paint, fuel or automotive fluids, trash, dirt.
- General BMPs that apply to Port-wide maintenance activities.

The general stormwater BMPs that Port staff are trained to implement wherever they are working include:

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<sup>3</sup> AWWA, 2015

<sup>4</sup> NMFS, 2009

- **BE AWARE:** Always be aware of the potential to pollute the Bay. Employees inspect the work site for good housekeeping and ensure that BMPs are in place (e.g containment boom is secure and in good condition, materials and equipment properly stored) at the beginning and end of each day.
- **DEBRIS MANAGEMENT:** Place trash and debris in proper containers. Keep trash bin lids closed. (CASQA BMP WM5)
- **MATERIALS MANAGEMENT:** Store materials indoors / under cover to the extent possible to prevent contact with stormwater. Store any material with the potential for leaks in secondary containment. Ensure that material is correctly labelled. (CASQA BMP NS14 & WM1)
- **MAINTAIN EQUIPMENT / TOOLS:** Keep equipment / tools clean and avoid excessive build-up of oil and grease. Inspect equipment / tools regularly for leaks and perform repairs promptly.
- **VEHICLE and EQUIPMENT WASHING:** Wash vehicles and equipment only at the Pier 50 designated washing area only – the drain in this area drains to an oil / water separator and the sewer. Vehicles may also be washed at a commercial car wash. (CASQA BMPs NS8)
- **PROTECT STORM DRAINS:** Wherever there is potential for material to enter a catch basin, storm drain inlet or drains to the bay. Keep materials set back from storm drains and areas adjacent to water.
- **CLEAN SPILLS IMMEDIATELY:** Thoroughly clean up spills using dry cleaning methods (absorbent / kitty litter). Clean up used absorbent promptly. Keep a spill kit in your work vehicle for easy access. Never hose down spills or leaks.
- **END OF DAY CLEAN-UP:** At the end of the day or when activities are over, conduct a general clean-up to remove debris, trash, and inspect for spills.
- **RAIN EVENT PREPARATION:** Inspect your work area, equipment, and tools prior to storms. Verify that materials / equipment / tools are covered or stored indoors to minimize exposure to rainwater to the extent possible. Check to see if there are any pollutants that can be washed into the bay.

## **4.8 Fueling**

Port vehicles and construction equipment (e.g. excavator, pavement roller, generators, lawn mower) are generally fueled and maintained off-site, either at the City and County of San Francisco's central fueling and maintenance facilities, or within the Port's Maintenance facilities at Pier 50 or Pier 80. The Port's primary maintenance facility includes an indoor automotive shop, covered outdoor parking, and dedicated wash rack with connection to the City's combined sewer system. (CASQA BMPs NS9 & NS10)

Diesel-powered portable generators, air compressors, and mobile equipment are fueled by the Port's fuel truck, which carries a collapsible polyethylene spill containment pool, which is placed beneath the connection during fueling. All Port vehicles carry small spill response kits with petroleum-absorbent pads and litter, smaller drip pans, etc. (CASQA BMP NS9).

Pile Driver #1 is on a barge-mounted crane, with a 1,000 gallon diesel tank that fuels air compressors and a hydraulic compressor that power crane operations (e.g winch, hoists, pile-driving hammer). There are also fixed cranes on the pier decks at Pier 80 and 96. These pieces of equipment are fueled by a contracted delivery services that operates in accordance with 33 CFR 154 and California Department of Fish and Wildlife – Office of Spill Prevention and Response regulations for small marine fueling facilities.



The Port's Pile Driver 4: has a diesel engine that is supplied from a 55-gallon drum, which is fully enclosed in plastic secondary containment within a 20-ft shipping container and secured to the pile-driving barge. The 55-gallon drum that serves as the fuel tank is filled off site, not near or over water. ([CASQA BMPs NS9 & NS14](#)).

#### **4.9 Invasive Species Control**

The predominant invasive marine algal species of concern in San Francisco Bay is *Undaria pinnatifida* (*Undaria*), also known as Asian Kelp, or Wakame. *Undaria* is a fouling species and can be transported around through the movement of underwater infrastructure to which it has attached. If it spreads further within the bay *Undaria* poses a risk of altering the existing algae complexes that support the marine communities of the San Francisco Bay. *Undaria* is not yet widely spread throughout the San Francisco Bay, but it has been found at Pier 40 South Beach Harbor and on floats at Pier 3. Careful manual removal and containment of *Undaria* before it is disturbed for dislodged by maintenance or construction activity can reduce the risk of dispersion and proliferation<sup>5</sup>.

Before removing any piles, floats, or other predominantly submerged structures, Port staff will examine the area for presence of *Undaria* and if present remove *Undaria* as follows ([BMP #4](#)):

1. A diver carefully places a small (e.g. 2-gallon) plastic bag around the algae until the bag is nearly flush with the structure. Using a hand-held scraping tool (e.g. putty knife), the diver removes the algae from its base, where it is attached to the structure, capturing all algae in the bag.
2. The bag is tightly closed and brought to the surface for disposal.
3. Equipment used in the water during *Undaria* removal will be thoroughly rinsed with fresh water between uses at different locations. Rinse water will not be allowed to drain to the bay.

Port maintenance work does not generally involve re-use of materials that have been used elsewhere. However, before any existing infrastructure (e.g., floating docks, moorings, mooring floats and anchor lines) from other parts of the bay or elsewhere might be installed within Port jurisdiction, the Port would require it to be cleaned off-site using high pressure washers or steam cleaners, with all wastewater and material from cleaning being captured to prevent it from re-entering the Bay.

## **5. References**

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American Wood Protection Association, 2015. "User Specification for Treated Wood". 2015.

California Stormwater Quality Association, 2003. "Stormwater Best Management Practice Handbook – Construction", January 2003.

National Marine Fisheries Service, 2009. "The Use of Treated Wood Products in Aquatic Environments: Guidelines to West Coast NOAA Fisheries Staff". October 12, 2009.

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<sup>5</sup> URS, 2011

National Marine Fisheries Service, 2013. “2013 Not Likely to Adversely Affect Program”. August 13, 2013.

URS, 2011. “Invasive Species Control Plan, 34<sup>th</sup> America’s Cup and James R. Herman Cruise Terminal and Northeast Wharf Plaza”. November 2, 2011.



**Table 1: Summary of Avoidance & Minimization Measures and Best Management Practices**

RESOURCE CONCERN	Key Avoidance & Minimization Measures/BMPs
<b>Biological Resources</b>	
<b>BMP #1:</b> Noise Impacts from Pile Driving	<p>Replacement piles will be limited to treated and wrapped wood piles.</p> <p>Pile driving will be conducted in accordance with the 2013 NLAA Program criteria; for example:</p> <ul style="list-style-type: none"> <li>• use of a vibratory hammer where feasible</li> <li>• impact hammer driving of wood piles limited to one hammer and less than 20 piles per day</li> <li>• 12” cushion block used between hammer and pile</li> <li>• “soft-start” technique</li> </ul>
<b>BMP #2:</b> Shading	<p>The Port anticipates that the proposed work will reduce the area of over-water structures. Existing over-water structures will be replaced/repared, with no expansion or minimal expansion in footprint; other deteriorating structures may be removed permanently. Therefore, no BMPs or A&amp;M measures for shading are proposed.</p>
<b>BMP #3:</b> Invasive Species	<p>The proposed maintenance and repair program will allow existing uses to continue but will not enable new navigation that poses potential for introduction of invasive species.</p>
<b>Fill Placement and Sediment Removal</b>	
<b>BMP #4:</b> Fill Placement	<p>Fill quantities will be the minimum necessary to achieve the project purpose. The Port anticipates a net removal of fill.</p> <p>The Port will maintain records of additions and removal of fill, to track net quantities and ensure this goal is met over the life of the RGP. If net increase is observed at end of RGP period, Port will negotiate appropriate compensatory mitigation with agencies.</p>
<b>BMP #5:</b> Sediment Removal/Substrate Disturbance	<p>Sediment removal quantities will be the minimum necessary to achieve the project purpose. No dredging is proposed; sediment removal would be performed only in conjunction with and as necessary for repairs and maintenance.</p> <p>When practicable and feasible, debris removal in the tidal zone will be done during low tides and the machines will pick up debris, not excavate, scrape or grade the shoreline.</p>

<b>Water and Sediment Quality</b>	
<b>BMP #6:</b> Debris	<p>Closed debris containment booms, floating debris screens, and/or absorbent booms will be positioned beneath and alongside work areas whenever possible. During construction, the barges performing the work will be moored in a position to capture and contain the debris generated during any sub-structure or in-water work. Care will be taken to minimize debris falling into the water. In the event that debris does reach the bay, personnel in workboats will immediately retrieve the debris for proper handling and disposal. For small-scale over-water repairs and maintenance, tarps, tubs and/or vacuums will be used as appropriate to catch sawdust, debris, and drips.</p> <p>All construction material, wastes, debris, sediment, rubbish, trash, fencing, etc., will be removed from the site on a regular basis during work and at project completion. Debris will be transported to an authorized disposal area.</p>
<b>BMP #7:</b> Stormwater	<p>Minimal ground disturbance is anticipated since the proposed activities focus on maintenance and repair of existing hard-surfaced structures. Where ground disturbance is necessary, construction crews will reduce the footprint of disturbance to the minimum necessary to complete the project.</p> <p>Construction material that could wash or blow away will be covered every night and during any rainfall event.</p> <p>Construction materials will be stored in an area that does not freely drain to the Bay, free from standing water and wet soil, and protected from rain. If necessary, materials will be stored on skids or support timbers to keep them off the ground.</p> <p>Adequate erosion control supplies (sand bags, wattles, shovels, etc.) shall be kept on site and during all construction activities to ensure materials are kept out of water bodies.</p>

**Water and Sediment Quality (cont.)**

<p><b>BMP #8:</b> Spill Prevention and Response</p>	<p>Fueling and maintenance of vehicles and equipment will be conducted offsite with the exception of barge-mounted and fixed cranes. Fueling locations will be inspected after fueling to document that no spills have occurred. Any spills will be cleaned up immediately and reported in accordance with existing Port standard operating procedures for spill reporting. All Port vehicles carry spill response supplies.</p> <p>Fueling cranes on barges or fixed to pier decks over water will be performed using proper fuel transfer procedures as specified by federal regulations for fuel transfer. Land-based equipment will be fueled by mobile trucks with secondary containment or at the Port’s maintenance facility. Fueling location will be inspected after fueling to document that no spills have occurred. Spills will be cleaned up immediately using spill response equipment.</p> <p>Well-maintained equipment will be used to perform construction work, and, except in the case of a failure or breakdown, equipment maintenance will be performed off site. Repair crews will check heavy equipment daily for leaks, and not use equipment until any leak is fixed. If leaks or spills are encountered, the source of the leak will be identified, leaked material will be cleaned up, and the cleaning materials will be collected and will be properly disposed.</p> <p>All hazardous material shall be stored upland in storage trailers and/or shipping containers designed to provide adequate containment. Short-term laydown of hazardous materials for immediate use shall be permitted with the same anti-spill precautions.</p> <p>Petroleum products, chemicals, fresh cement, saw water, or concrete or water contaminated by the aforementioned shall not be allowed to enter the water.</p>
<p><b>BMP #9:</b> Treated Wood</p>	<p>No pilings or other wood structures that have been treated with creosote will be used.</p> <p>Any chemically treated piles will be wrapped with an impact resistant biologically inert substance.</p> <p>Treated wood products will be visually inspected upon arrival at the work site. Materials with visible residues or bleeding will be rejected. Wood products treated with an ammoniacal preservative (e.g., AZCA) will be rejected if there is a noticeable odor.</p> <p>Cleaning and maintenance activities that can remove particles of treated wood (such as power washing, sanding and aggressive scrubbing) will be minimized.</p> <p>The Port will consider feasible alternatives to treated-wood piles for</p>

	<p>large projects (&gt;100 piles) or where significant contiguous area of pile-supported structure is being replaced.</p> <p>Cutting stations will be equipped with large tarps to capture debris and will be located well away from the water to minimize wind transport of sawdust.</p> <p>If preservative treatments, water repellents or other coatings are applied at the work site (e.g. on cuts and boreholes), the treatment will be applied at the cutting station and allowed to dry or cure before the structure is moved to the over-water area.</p> <p>If cutting or boring of treated wood or touch-up preservative applications must be performed over water, tarps, plastic tubs or similar devices will be used to catch sawdust, debris, and drips. Preservatives will not be applied in the rain, and any excess preservative will be wiped off.</p> <p>Any debris that falls in the water will be promptly removed and handled as described above under “Debris” and “Stormwater”.</p>
<p><b>Water and Sediment Quality (cont.)</b></p>	
<p><b>BMP #10:</b> Sediment Quality/Turbidity</p>	<p>Pile removal will be conducted in accordance with the 2013 Corps/NMFS NLAA Program criteria, the Port’s standard specifications, and the San Francisco Bay Subtidal Goals Project Report, including:</p> <ul style="list-style-type: none"> <li>• Piles will be removed by direct pull or vibratory hammer, where possible.</li> <li>• Piles that cannot be pulled (or piles in known contaminated sediments, per below) will be cut two feet below the mudline to the extent feasible.</li> <li>• Piles will be removed only at low tide.</li> <li>• Disturbance of sediment will be minimized to the extent feasible during activities such as removal of piles and debris or minor excavation in conjunction with maintenance/repair of existing structures. Silt curtains are not generally warranted nor are they routinely used during Port maintenance activities because the existing procedures and small scale of the activities that would be performed under the authorization for Portwide maintenance do not generate significant turbidity.</li> <li>• Absorbent pads will be available for use in the event that petroleum sheen develops during sediment-disturbing activities.</li> <li>• Existing sediment quality data in areas planned for pile removal or sediment excavation will be reviewed prior to conducting work to assess risks of mobilizing or exposing contaminated sediments</li> <li>• Existing piles in areas with known elevated contaminant levels will be cut instead of pulled; cut piles will be capped as warranted.</li> </ul>

**Water and Sediment Quality (cont.)**

**BMP #11:** Materials

Chemically treated wood piles will be wrapped with an impact resistant biologically inert wrap.

Floating devices will be composed of materials that will not disintegrate, including concrete, steel, plastics or closed cell foam encapsulated sun resistant polyethylene.

Most existing decking, and hence most replacement decking, will be composed of wood. However, the use of light-transmitting materials or measures will be used or considered whenever feasible.

Port of San Francisco  
Port-wide Maintenance Manual

## **Appendix A – Selected Stormwater Best Management Practices**

*From: California Stormwater Quality Association BMP Handbook – Construction, 2003.*

**NS8 – Vehicle and Equipment Cleaning**

**NS9 – Vehicle and Equipment Fueling**

**NS10 - Vehicle and Equipment Maintenance**

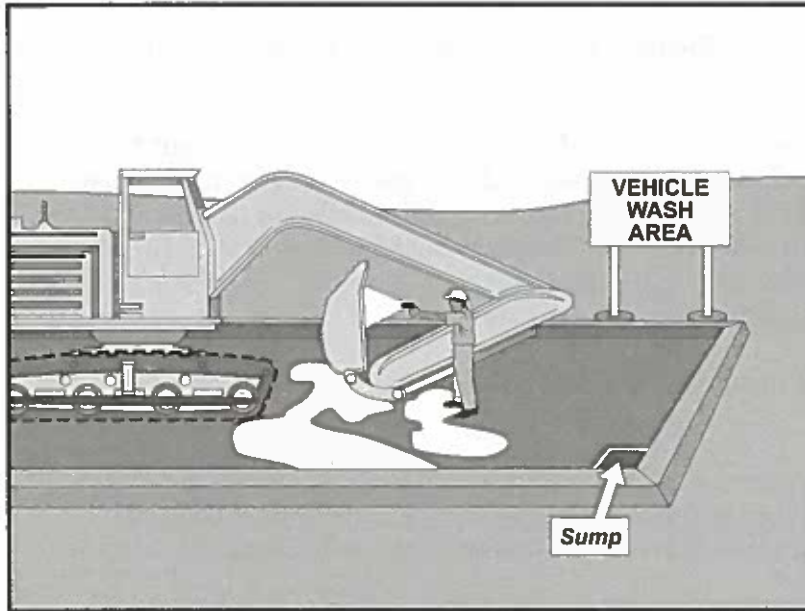
**NS14 - Material Over Water**

**NS15 - Demolition Adjacent to Water**

**WM1- Material Delivery and Storage**

**WM2 - Material Use**

**WM5 - Solid Waste Management**



### Description and Purpose

Vehicle and equipment cleaning procedures and practices prevent or reduce the discharge of pollutants to stormwater from vehicle and equipment cleaning by using offsite facilities; washing in designated, contained areas only; eliminating discharges to the storm drain by infiltrating the wash water; and training employees and subcontractors.

### Suitable Applications

These procedures are suitable on all construction sites where vehicle and equipment cleaning is performed.

### Limitations

Even phosphate-free, biodegradable soaps have been shown to be toxic to fish before the soap degrades. Sending vehicles/equipment offsite should be done in conjunction with TC-1, Stabilized Construction Entrance/ Exit.

### Implementation

Use an offsite commercial washing business as much as possible. These businesses are better equipped to handle and dispose of the wash waters properly. Performing this work offsite can also be economical by eliminating the need for a separate washing operation onsite.

- Use phosphate-free, biodegradable soaps.
- Educate employees and subcontractors on pollution prevention measures.

### Objectives

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	✓
WM	Waste Management and Materials Pollution Control	

### Legend:

- ✓ Primary Objective
- ✓ Secondary Objective

### Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	
Metals	
Bacteria	
Oil and Grease	✓
Organics	✓

### Potential Alternatives

None



# NS-8 Vehicle and Equipment Cleaning

- Do not permit steam cleaning onsite. Steam cleaning can generate significant pollutant concentrates.
- Cleaning of vehicles and equipment with soap, solvents or steam should not occur on the project site unless resulting wastes are fully contained and disposed of. Resulting wastes should not be discharged or buried, and must be captured and recycled or disposed according to the requirements of WM-10, Liquid Waste Management or WM-6, Hazardous Waste Management, depending on the waste characteristics. Minimize use of solvents. Use of diesel for vehicle and equipment cleaning is prohibited.
- All vehicles and equipment that regularly enter and leave the construction site must be cleaned offsite.
- When vehicle and equipment washing and cleaning must occur onsite, and the operation cannot be located within a structure or building equipped with appropriate disposal facilities, the outside cleaning area should have the following characteristics:
  - Located away from storm drain inlets, drainage facilities, or watercourses
  - Paved with concrete or asphalt and bermed to contain wash waters and to prevent runoff
  - Configured with a sump to allow collection and disposal of wash water
  - No discharge of wash waters to storm drains or watercourses
  - Used only when necessary
- When cleaning vehicles and equipment with water:
  - Use as little water as possible. High-pressure sprayers may use less water than a hose and should be considered
  - Use positive shutoff valve to minimize water usage
  - Facility wash racks should discharge to a sanitary sewer, recycle system or other approved discharge system and should not discharge to the storm drainage system, watercourses, or to groundwater

## Costs

Cleaning vehicles and equipment at an offsite facility may reduce overall costs for vehicle and equipment cleaning by eliminating the need to provide similar services onsite. When onsite cleaning is needed, the cost to establish appropriate facilities is relatively low on larger, long-duration projects, and moderate to high on small, short-duration projects.

## Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and at two-week intervals in the non-rainy season to verify continued BMP implementation.

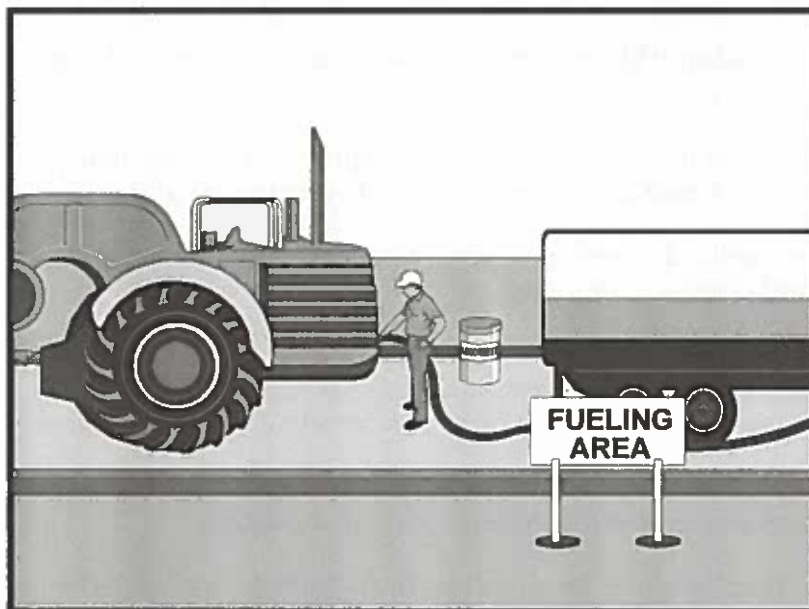


- Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges occur.
- Inspection and maintenance is minimal, although some berm repair may be necessary.
- Monitor employees and subcontractors throughout the duration of the construction project to ensure appropriate practices are being implemented.
- Inspect sump regularly and remove liquids and sediment as needed.
- Prohibit employees and subcontractors from washing personal vehicles and equipment on the construction site.

## References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Swisher, R.D. Surfactant Biodegradation, Marcel Decker Corporation, 1987.



## Description and Purpose

Vehicle equipment fueling procedures and practices are designed to prevent fuel spills and leaks, and reduce or eliminate contamination of stormwater. This can be accomplished by using offsite facilities, fueling in designated areas only, enclosing or covering stored fuel, implementing spill controls, and training employees and subcontractors in proper fueling procedures.

## Suitable Applications

These procedures are suitable on all construction sites where vehicle and equipment fueling takes place.

## Limitations

Onsite vehicle and equipment fueling should only be used where it is impractical to send vehicles and equipment offsite for fueling. Sending vehicles and equipment offsite should be done in conjunction with TC-1, Stabilized Construction Entrance/ Exit.

## Implementation

- Use offsite fueling stations as much as possible. These businesses are better equipped to handle fuel and spills properly. Performing this work offsite can also be economical by eliminating the need for a separate fueling area at a site.
- Discourage “topping-off” of fuel tanks.

## Objectives

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	✓
WM	Waste Management and Materials Pollution Control	

## Legend:

- ✓ Primary Objective
- ✓ Secondary Objective

## Targeted Constituents

Sediment	
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	✓
Organics	

## Potential Alternatives

None



- Absorbent spill cleanup materials and spill kits should be available in fueling areas and on fueling trucks, and should be disposed of properly after use.
- Drip pans or absorbent pads should be used during vehicle and equipment fueling, unless the fueling is performed over an impermeable surface in a dedicated fueling area.
- Use absorbent materials on small spills. Do not hose down or bury the spill. Remove the adsorbent materials promptly and dispose of properly.
- Avoid mobile fueling of mobile construction equipment around the site; rather, transport the equipment to designated fueling areas. With the exception of tracked equipment such as bulldozers and large excavators, most vehicles should be able to travel to a designated area with little lost time.
- Train employees and subcontractors in proper fueling and cleanup procedures.
- When fueling must take place onsite, designate an area away from drainage courses to be used. Fueling areas should be identified in the SWPPP.
- Dedicated fueling areas should be protected from stormwater runoff and runoff, and should be located at least 50 ft away from downstream drainage facilities and watercourses. Fueling must be performed on level-grade areas.
- Protect fueling areas with berms and dikes to prevent runoff, runoff, and to contain spills.
- Nozzles used in vehicle and equipment fueling should be equipped with an automatic shutoff to control drips. Fueling operations should not be left unattended.
- Use vapor recovery nozzles to help control drips as well as air pollution where required by Air Quality Management Districts (AQMD).
- Federal, state, and local requirements should be observed for any stationary above ground storage tanks.

**Costs**

- All of the above measures are low cost except for the capital costs of above ground tanks that meet all local environmental, zoning, and fire codes.

**Inspection and Maintenance**

- Vehicles and equipment should be inspected each day of use for leaks. Leaks should be repaired immediately or problem vehicles or equipment should be removed from the project site.
- Keep ample supplies of spill cleanup materials onsite.
- Immediately clean up spills and properly dispose of contaminated soil and cleanup materials.

## References

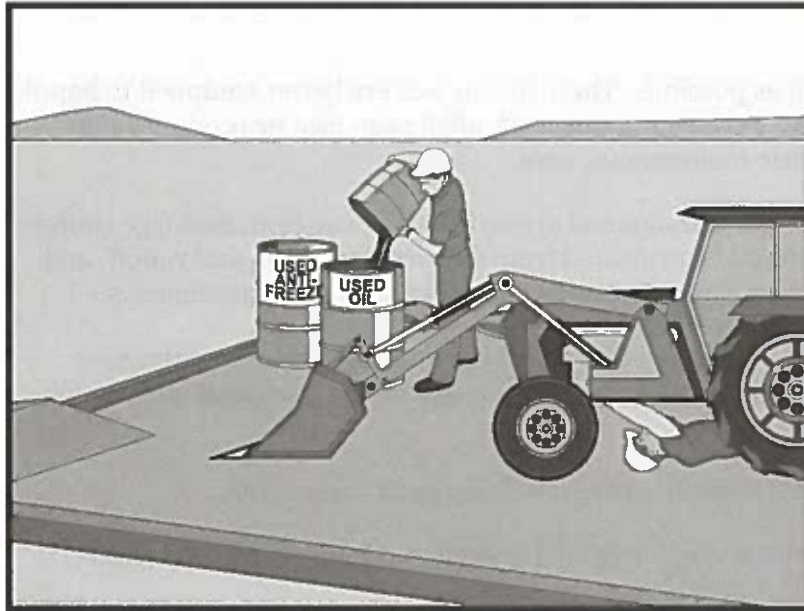
Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance, Working Group Working Paper; USEPA, April 1992.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

# Vehicle & Equipment Maintenance NS-10



## Description and Purpose

Prevent or reduce the contamination of stormwater resulting from vehicle and equipment maintenance by running a “dry and clean site”. The best option would be to perform maintenance activities at an offsite facility. If this option is not available then work should be performed in designated areas only, while providing cover for materials stored outside, checking for leaks and spills, and containing and cleaning up spills immediately. Employees and subcontractors must be trained in proper procedures.

## Suitable Applications

These procedures are suitable on all construction projects where an onsite yard area is necessary for storage and maintenance of heavy equipment and vehicles.

## Limitations

Onsite vehicle and equipment maintenance should only be used where it is impractical to send vehicles and equipment offsite for maintenance and repair. Sending vehicles/equipment offsite should be done in conjunction with TC-1, Stabilized Construction Entrance/Exit.

Outdoor vehicle or equipment maintenance is a potentially significant source of stormwater pollution. Activities that can contaminate stormwater include engine repair and service, changing or replacement of fluids, and outdoor equipment storage and parking (engine fluid leaks). For further information on vehicle or equipment servicing, see NS-8, Vehicle and Equipment Cleaning, and NS-9, Vehicle and Equipment Fueling.

## Objectives

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	✓
WM	Waste Management and Materials Pollution Control	

## Legend:

- ✓ Primary Objective
- ✓ Secondary Objective

## Targeted Constituents

Sediment	
Nutrients	✓
Trash	✓
Metals	
Bacteria	
Oil and Grease	✓
Organics	✓

## Potential Alternatives

None



# NS-10 Vehicle & Equipment Maintenance

## Implementation

- Use offsite repair shops as much as possible. These businesses are better equipped to handle vehicle fluids and spills properly. Performing this work offsite can also be economical by eliminating the need for a separate maintenance area.
- If maintenance must occur onsite, use designated areas, located away from drainage courses. Dedicated maintenance areas should be protected from stormwater runoff and should be located at least 50 ft from downstream drainage facilities and watercourses.
- Drip pans or absorbent pads should be used during vehicle and equipment maintenance work that involves fluids, unless the maintenance work is performed over an impermeable surface in a dedicated maintenance area.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- All fueling trucks and fueling areas are required to have spill kits and/or use other spill protection devices.
- Use adsorbent materials on small spills. Remove the adsorbent materials promptly and dispose of properly.
- Inspect onsite vehicles and equipment daily at startup for leaks, and repair immediately.
- Keep vehicles and equipment clean; do not allow excessive build-up of oil and grease.
- Segregate and recycle wastes, such as greases, used oil or oil filters, antifreeze, cleaning solutions, automotive batteries, hydraulic and transmission fluids. Provide secondary containment and covers for these materials if stored onsite.
- Train employees and subcontractors in proper maintenance and spill cleanup procedures.
- Drip pans or plastic sheeting should be placed under all vehicles and equipment placed on docks, barges, or other structures over water bodies when the vehicle or equipment is planned to be idle for more than 1 hour.
- For long-term projects, consider using portable tents or covers over maintenance areas if maintenance cannot be performed offsite.
- Consider use of new, alternative greases and lubricants, such as adhesive greases, for chassis lubrication and fifth-wheel lubrication.
- Properly dispose of used oils, fluids, lubricants, and spill cleanup materials.
- Do not place used oil in a dumpster or pour into a storm drain or watercourse.
- Properly dispose of or recycle used batteries.
- Do not bury used tires.
- Repair leaks of fluids and oil immediately.



# Vehicle & Equipment Maintenance NS-10

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Listed below is further information if you must perform vehicle or equipment maintenance onsite.

## ***Safer Alternative Products***

- Consider products that are less toxic or hazardous than regular products. These products are often sold under an “environmentally friendly” label.
- Consider use of grease substitutes for lubrication of truck fifth-wheels. Follow manufacturers label for details on specific uses.
- Consider use of plastic friction plates on truck fifth-wheels in lieu of grease. Follow manufacturers label for details on specific uses.

## ***Waste Reduction***

Parts are often cleaned using solvents such as trichloroethylene, trichloroethane, or methylene chloride. Many of these cleaners are listed in California Toxic Rule as priority pollutants. These materials are harmful and must not contaminate stormwater. They must be disposed of as a hazardous waste. Reducing the number of solvents makes recycling easier and reduces hazardous waste management costs. Often, one solvent can perform a job as well as two different solvents. Also, if possible, eliminate or reduce the amount of hazardous materials and waste by substituting non-hazardous or less hazardous materials. For example, replace chlorinated organic solvents with non-chlorinated solvents. Non-chlorinated solvents like kerosene or mineral spirits are less toxic and less expensive to dispose of properly. Check the list of active ingredients to see whether it contains chlorinated solvents. The “chlor” term indicates that the solvent is chlorinated. Also, try substituting a wire brush for solvents to clean parts.

## ***Recycling and Disposal***

Separating wastes allows for easier recycling and may reduce disposal costs. Keep hazardous wastes separate, do not mix used oil solvents, and keep chlorinated solvents (like, trichloroethane) separate from non-chlorinated solvents (like kerosene and mineral spirits). Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around. Provide cover and secondary containment until these materials can be removed from the site.

Oil filters can be recycled. Ask your oil supplier or recycler about recycling oil filters.

Do not dispose of extra paints and coatings by dumping liquid onto the ground or throwing it into dumpsters. Allow coatings to dry or harden before disposal into covered dumpsters.

Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries, even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

## **Costs**

All of the above are low cost measures. Higher costs are incurred to setup and maintain onsite maintenance areas.

# **NS-10 Vehicle & Equipment Maintenance**

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## **Inspection and Maintenance**

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and at two-week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges occur.
- Keep ample supplies of spill cleanup materials onsite.
- Maintain waste fluid containers in leak proof condition.
- Vehicles and equipment should be inspected on each day of use. Leaks should be repaired immediately or the problem vehicle(s) or equipment should be removed from the project site.
- Inspect equipment for damaged hoses and leaky gaskets routinely. Repair or replace as needed.

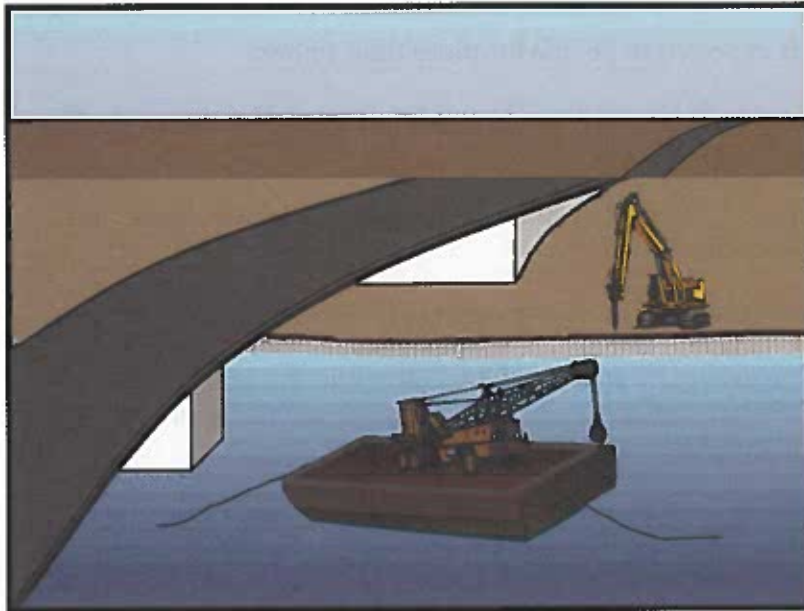
## **References**

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Coastal Nonpoint Pollution Control Program; Program Development and Approval Guidance, Working Group, Working Paper; USEPA, April 1992.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.





## Objectives

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	✓
WM	Waste Management and Materials Pollution Control	✓

## Legend:

- ✓ Primary Objective
- ✓ Secondary Objective

## Description and Purpose

Procedures for the proper use, storage, and disposal of materials and equipment on barges, boats, temporary construction pads, or similar locations, that minimize or eliminate the discharge of potential pollutants to a watercourse.

## Suitable Applications

Applies where materials and equipment are used on barges, boats, docks, and other platforms over or adjacent to a watercourse including waters of the United States. These procedures should be implemented for construction materials and wastes (solid and liquid), soil or dredging materials, or any other materials that may cause or contribute to exceedances of water quality standards.

## Limitations

Dredge and fill activities are regulated by the US Army Corps of Engineers and Regional Boards under Section 404/401 of the Clean Water Act.

## Implementation

- Refer to WM-1, Material Delivery and Storage and WM-4, Spill Prevention and Control.
- Use drip pans and absorbent materials for equipment and vehicles and ensure that an adequate supply of spill clean up materials is available.
- Drip pans should be placed under all vehicles and equipment placed on docks, barges, or other structures over water bodies

## Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	✓
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

## Potential Alternatives

None



when the vehicle or equipment is expected to be idle for more than 1 hour.

- Maintain equipment in accordance with NS-10, Vehicle and Equipment Maintenance. If a leaking line cannot be repaired, remove equipment from over the water.
- Provide watertight curbs or toe boards to contain spills and prevent materials, tools, and debris from leaving the barge, platform, dock, etc.
- Secure all materials to prevent discharges to receiving waters via wind.
- Identify types of spill control measures to be employed, including the storage of such materials and equipment. Ensure that staff is trained regarding the use of the materials, deployment and access of control measures, and reporting measures.
- In case of spills, contact the local Regional Board as soon as possible but within 48 hours.
- Refer to WM-5, Solid Waste Management (non-hazardous) and WM-6, Hazardous Waste Management. Ensure the timely and proper removal of accumulated wastes
- Comply with all necessary permits required for construction within or near the watercourse, such as Regional Water Quality Control Board, U.S. Army Corps of Engineers, Department of Fish and Game or and other local permitting.
- Discharges to waterways should be reported to the Regional Water Quality Control Board immediately upon discovery. A written discharge notification must follow within 7 days. Follow the spill reporting procedures contained in SWPPP.

### Costs

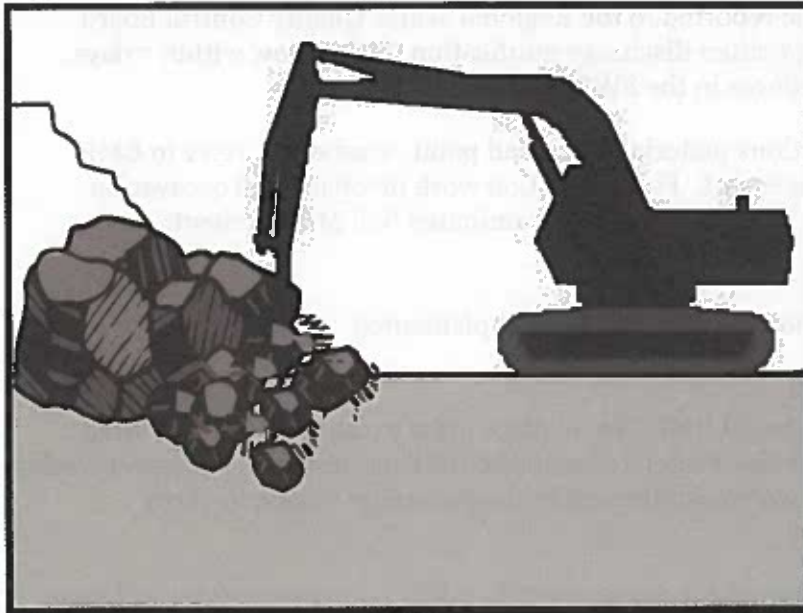
These measures are generally of low to moderate cost. Exceptions are areas for temporary storage of materials, engine fluids, or wastewater pump out.

### Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur.
- Ensure that employees and subcontractors implement the appropriate measures for storage and use of materials and equipment.
- Inspect and maintain all associated BMPs and perimeter controls to ensure continuous protection of the water courses, including waters of the United States.

### References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.



### Objectives

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	✓
WM	Waste Management and Materials Pollution Control	

### Legend:

- ✓ Primary Objective
- ✓ Secondary Objective

### Description and Purpose

Procedures to protect water bodies from debris and wastes associated with structure demolition or removal over or adjacent to watercourses.

### Suitable Applications

Full bridge demolition and removal, partial bridge removal (barrier rail, edge of deck) associated with bridge widening projects, concrete channel removal, or any other structure removal that could potentially affect water quality.

### Limitations

None identified.

### Implementation

- Refer to NS-5, Clear Water Diversion, to direct water away from work areas.
- Use attachments on construction equipment such as backhoes to catch debris from small demolition operations.
- Use covers or platforms to collect debris.
- Platforms and covers are to be approved by the owner.
- Stockpile accumulated debris and waste generated during demolition away from watercourses and in accordance with WM-3, Stockpile Management.
- Ensure safe passage of wildlife, as necessary.

### Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	✓
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

### Potential Alternatives

None



- Discharges to waterways shall be reported to the Regional Water Quality Control Board immediately upon discovery. A written discharge notification must follow within 7 days. Follow the spill reporting procedures in the SWPPP.
- For structures containing hazardous materials, i.e., lead paint or asbestos, refer to BMP WM-6, Hazardous Waste Management. For demolition work involving soil excavation around lead-painted structures, refer to WM-7, Contaminated Soil Management.

**Costs**

Cost may vary according to the combination of practices implemented.

**Inspection and Maintenance**

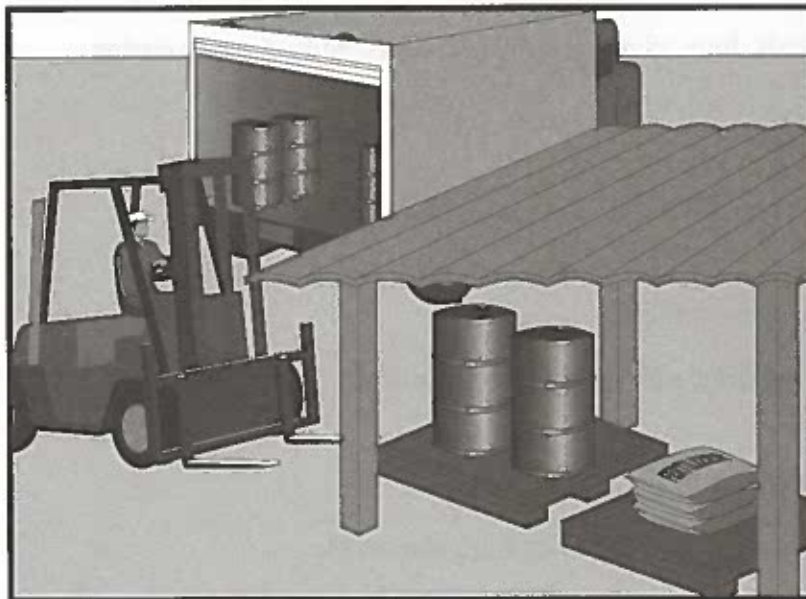
- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur.
- Any debris-catching devices shall be emptied regularly. Collected debris shall be removed and stored away from the watercourse and protected from runoff and runoff.

**References**

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.





## Objectives

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	✓

## Legend:

- ✓ Primary Objective
- ✓ Secondary Objective

## Description and Purpose

Prevent, reduce, or eliminate the discharge of pollutants from material delivery and storage to the stormwater system or watercourses by minimizing the storage of hazardous materials onsite, storing materials in a designated area, installing secondary containment, conducting regular inspections, and training employees and subcontractors.

This best management practice covers only material delivery and storage. For other information on materials, see WM-2, Material Use, or WM-4, Spill Prevention and Control. For information on wastes, see the waste management BMPs in this section.

## Suitable Applications

These procedures are suitable for use at all construction sites with delivery and storage of the following materials:

- Soil stabilizers and binders
- Pesticides and herbicides
- Fertilizers
- Detergents
- Plaster
- Petroleum products such as fuel, oil, and grease
- Asphalt and concrete components

## Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	✓
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

## Potential Alternatives

None



- Hazardous chemicals such as acids, lime, glues, adhesives, paints, solvents, and curing compounds
- Concrete compounds
- Other materials that may be detrimental if released to the environment

**Limitations**

- Space limitation may preclude indoor storage.
- Storage sheds often must meet building and fire code requirements.

**Implementation**

The following steps should be taken to minimize risk:

- Temporary storage area should be located away from vehicular traffic.
- Material Safety Data Sheets (MSDS) should be supplied for all materials stored.
- Construction site areas should be designated for material delivery and storage.
- Material delivery and storage areas should be located near the construction entrances, away from waterways, if possible.
  - Avoid transport near drainage paths or waterways.
  - Surround with earth berms. See EC-9, Earth Dikes and Drainage Swales.
  - Place in an area which will be paved.
- Storage of reactive, ignitable, or flammable liquids must comply with the fire codes of your area. Contact the local Fire Marshal to review site materials, quantities, and proposed storage area to determine specific requirements. See the Flammable and Combustible Liquid Code, NFPA30.
- An up to date inventory of materials delivered and stored onsite should be kept.
- Hazardous materials storage onsite should be minimized.
- Hazardous materials should be handled as infrequently as possible.
- During the rainy season, consider storing materials in a covered area. Store materials in secondary containments such as earthen dike, horse trough, or even a children's wading pool for non-reactive materials such as detergents, oil, grease, and paints. Small amounts of material may be secondarily contained in "bus boy" trays or concrete mixing trays.
- Do not store chemicals, drums, or bagged materials directly on the ground. Place these items on a pallet and, when possible, in secondary containment.

- If drums must be kept uncovered, store them at a slight angle to reduce ponding of rainwater on the lids to reduce corrosion. Domed plastic covers are inexpensive and snap to the top of drums, preventing water from collecting.
- Chemicals should be kept in their original labeled containers.
- Employees and subcontractors should be trained on the proper material delivery and storage practices.
- Employees trained in emergency spill cleanup procedures must be present when dangerous materials or liquid chemicals are unloaded.
- If significant residual materials remain on the ground after construction is complete, properly remove materials and any contaminated soil. See WM-7, Contaminated Soil Management. If the area is to be paved, pave as soon as materials are removed to stabilize the soil.

## ***Material Storage Areas and Practices***

- Liquids, petroleum products, and substances listed in 40 CFR Parts 110, 117, or 302 should be stored in approved containers and drums and should not be overfilled. Containers and drums should be placed in temporary containment facilities for storage.
- A temporary containment facility should provide for a spill containment volume able to contain precipitation from a 25 year storm event, plus the greater of 10% of the aggregate volume of all containers or 100% of the capacity of the largest container within its boundary, whichever is greater.
- A temporary containment facility should be impervious to the materials stored therein for a minimum contact time of 72 hours.
- A temporary containment facility should be maintained free of accumulated rainwater and spills. In the event of spills or leaks, accumulated rainwater and spills should be collected and placed into drums. These liquids should be handled as a hazardous waste unless testing determines them to be non-hazardous. All collected liquids or non-hazardous liquids should be sent to an approved disposal site.
- Sufficient separation should be provided between stored containers to allow for spill cleanup and emergency response access.
- Incompatible materials, such as chlorine and ammonia, should not be stored in the same temporary containment facility.
- Throughout the rainy season, each temporary containment facility should be covered during non-working days, prior to, and during rain events.
- Materials should be stored in their original containers and the original product labels should be maintained in place in a legible condition. Damaged or otherwise illegible labels should be replaced immediately.

- Bagged and boxed materials should be stored on pallets and should not be allowed to accumulate on the ground. To provide protection from wind and rain throughout the rainy season, bagged and boxed materials should be covered during non-working days and prior to and during rain events.
- Stockpiles should be protected in accordance with WM-3, Stockpile Management.
- Materials should be stored indoors within existing structures or sheds when available.
- Proper storage instructions should be posted at all times in an open and conspicuous location.
- An ample supply of appropriate spill clean up material should be kept near storage areas.
- Also see WM-6, Hazardous Waste Management, for storing of hazardous materials.

***Material Delivery Practices***

- Keep an accurate, up-to-date inventory of material delivered and stored onsite.
- Arrange for employees trained in emergency spill cleanup procedures to be present when dangerous materials or liquid chemicals are unloaded.

***Spill Cleanup***

- Contain and clean up any spill immediately.
- Properly remove and dispose of any hazardous materials or contaminated soil if significant residual materials remain on the ground after construction is complete. See WM-7, Contaminated Soil Management.
- See WM-4, Spill Prevention and Control, for spills of chemicals and/or hazardous materials.

**Cost**

- The largest cost of implementation may be in the construction of a materials storage area that is covered and provides secondary containment.

**Inspection and Maintenance**

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.
- Keep an ample supply of spill cleanup materials near the storage area.
- Keep storage areas clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored.
- Repair or replace perimeter controls, containment structures, covers, and liners as needed to maintain proper function.



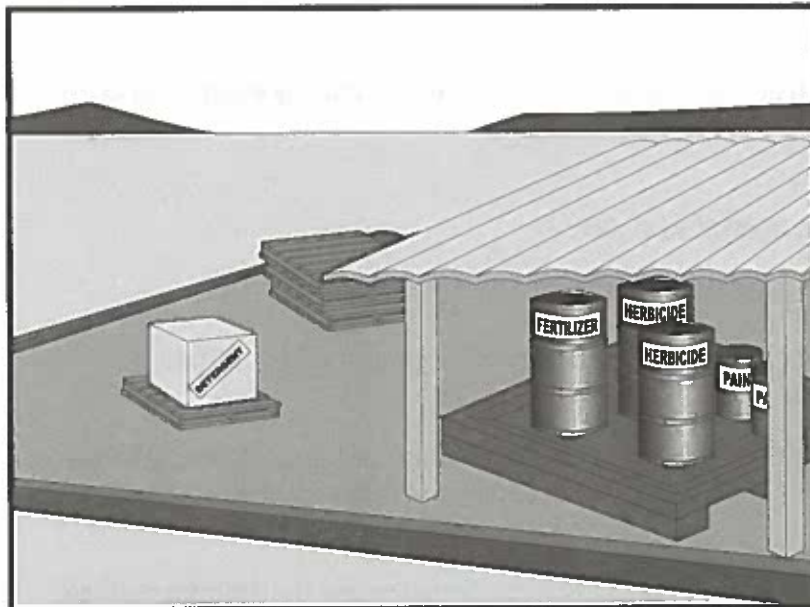
## References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance, Working Group Working Paper; USEPA, April 1992.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.



### Description and Purpose

Prevent or reduce the discharge of pollutants to the storm drain system or watercourses from material use by using alternative products, minimizing hazardous material use onsite, and training employees and subcontractors.

### Suitable Applications

This BMP is suitable for use at all construction projects. These procedures apply when the following materials are used or prepared onsite:

- Pesticides and herbicides
- Fertilizers
- Detergents
- Plaster
- Petroleum products such as fuel, oil, and grease
- Asphalt and other concrete components
- Other hazardous chemicals such as acids, lime, glues, adhesives, paints, solvents, and curing compounds
- Concrete compounds
- Other materials that may be detrimental if released to the environment

### Objectives

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	✓

### Legend:

- ✓ Primary Objective
- ✓ Secondary Objective

### Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	✓
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

### Potential Alternatives

None



**Limitations**

Safer alternative building and construction products may not be available or suitable in every instance.

**Implementation**

The following steps should be taken to minimize risk:

- Minimize use of hazardous materials onsite.
- Follow manufacturer instructions regarding uses, protective equipment, ventilation, flammability, and mixing of chemicals.
- Train personnel who use pesticides. The California Department of Pesticide Regulation and county agricultural commissioners license pesticide dealers, certify pesticide applicators, and conduct onsite inspections.
- Do not over-apply fertilizers, herbicides, and pesticides. Prepare only the amount needed. Follow the recommended usage instructions. Over-application is expensive and environmentally harmful. Unless on steep slopes, till fertilizers into the soil rather than hydro seeding. Apply surface dressings in several smaller applications, as opposed to one large application, to allow time for infiltration and to avoid excess material being carried offsite by runoff. Do not apply these chemicals just before it rains.
- Train employees and subcontractors in proper material use.
- Supply Material Safety Data Sheets (MSDS) for all materials.
- Dispose of latex paint and paint cans, used brushes, rags, absorbent materials, and drop cloths, when thoroughly dry and are no longer hazardous, with other construction debris.
- Do not remove the original product label; it contains important safety and disposal information. Use the entire product before disposing of the container.
- Mix paint indoors or in a containment area. Never clean paintbrushes or rinse paint containers into a street, gutter, storm drain, or watercourse. Dispose of any paint thinners, residue, and sludge(s) that cannot be recycled, as hazardous waste.
- For water-based paint, clean brushes to the extent practicable, and rinse to a drain leading to a sanitary sewer where permitted, or into a concrete washout pit or temporary sediment trap. For oil-based paints, clean brushes to the extent practicable, and filter and reuse thinners and solvents.
- Use recycled and less hazardous products when practical. Recycle residual paints, solvents, non-treated lumber, and other materials.
- Use materials only where and when needed to complete the construction activity. Use safer alternative materials as much as possible. Reduce or eliminate use of hazardous materials onsite when practical.

- Require contractors to complete the “Report of Chemical Spray Forms” when spraying herbicides and pesticides.
- Keep an ample supply of spill clean up material near use areas. Train employees in spill clean up procedures.
- Avoid exposing applied materials to rainfall and runoff unless sufficient time has been allowed for them to dry.

## Costs

All of the above are low cost measures.

## Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and at two-week intervals in the non-rainy season to verify continued BMP implementation.
- Maintenance of this best management practice is minimal.
- Spot check employees and subcontractors throughout the job to ensure appropriate practices are being employed.

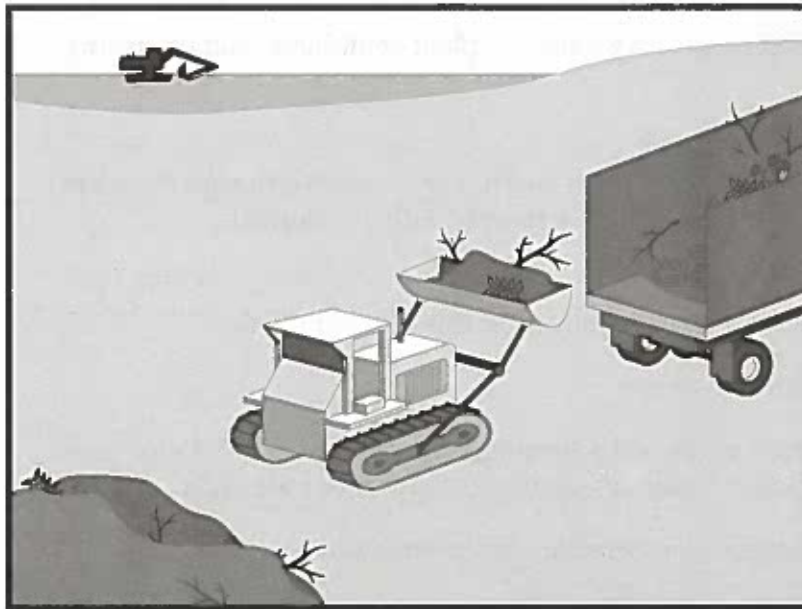
## References

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Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance, Working Group Working Paper; USEPA, April 1992.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.



### Description and Purpose

Solid waste management procedures and practices are designed to prevent or reduce the discharge of pollutants to stormwater from solid or construction waste by providing designated waste collection areas and containers, arranging for regular disposal, and training employees and subcontractors.

### Suitable Applications

This BMP is suitable for construction sites where the following wastes are generated or stored:

- Solid waste generated from trees and shrubs removed during land clearing, demolition of existing structures (rubble), and building construction
- Packaging materials including wood, paper, and plastic
- Scrap or surplus building materials including scrap metals, rubber, plastic, glass pieces and masonry products
- Domestic wastes including food containers such as beverage cans, coffee cups, paper bags, plastic wrappers, and cigarettes
- Construction wastes including brick, mortar, timber, steel and metal scraps, pipe and electrical cuttings, non-hazardous equipment parts, styrofoam and other materials used to transport and package construction materials

### Objectives

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	✓

### Legend:

- ✓ Primary Objective
- ✓ Secondary Objective

### Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	✓
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

### Potential Alternatives

None



- Highway planting wastes, including vegetative material, plant containers, and packaging materials

**Limitations**

Temporary stockpiling of certain construction wastes may not necessitate stringent drainage related controls during the non-rainy season or in desert areas with low rainfall.

**Implementation**

The following steps will help keep a clean site and reduce stormwater pollution:

- Select designated waste collection areas onsite.
- Inform trash-hauling contractors that you will accept only watertight dumpsters for onsite use. Inspect dumpsters for leaks and repair any dumpster that is not watertight.
- Locate containers in a covered area or in a secondary containment.
- Provide an adequate number of containers with lids or covers that can be placed over the container to keep rain out or to prevent loss of wastes when it is windy.
- Plan for additional containers and more frequent pickup during the demolition phase of construction.
- Collect site trash daily, especially during rainy and windy conditions.
- Remove this solid waste promptly since erosion and sediment control devices tend to collect litter.
- Make sure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.
- Do not hose out dumpsters on the construction site. Leave dumpster cleaning to the trash hauling contractor.
- Arrange for regular waste collection before containers overflow.
- Clean up immediately if a container does spill.
- Make sure that construction waste is collected, removed, and disposed of only at authorized disposal areas.

**Education**

- Have the contractor's superintendent or representative oversee and enforce proper solid waste management procedures and practices.
- Instruct employees and subcontractors on identification of solid waste and hazardous waste.
- Educate employees and subcontractors on solid waste storage and disposal procedures.



- Hold regular meetings to discuss and reinforce disposal procedures (incorporate into regular safety meetings).
- Require that employees and subcontractors follow solid waste handling and storage procedures.
- Prohibit littering by employees, subcontractors, and visitors.
- Minimize production of solid waste materials wherever possible.

### ***Collection, Storage, and Disposal***

- Littering on the project site should be prohibited.
- To prevent clogging of the storm drainage system, litter and debris removal from drainage grates, trash racks, and ditch lines should be a priority.
- Trash receptacles should be provided in the contractor's yard, field trailer areas, and at locations where workers congregate for lunch and break periods.
- Litter from work areas within the construction limits of the project site should be collected and placed in watertight dumpsters at least weekly, regardless of whether the litter was generated by the contractor, the public, or others. Collected litter and debris should not be placed in or next to drain inlets, stormwater drainage systems, or watercourses.
- Dumpsters of sufficient size and number should be provided to contain the solid waste generated by the project.
- Full dumpsters should be removed from the project site and the contents should be disposed of by the trash hauling contractor.
- Construction debris and waste should be removed from the site biweekly or more frequently as needed.
- Construction material visible to the public should be stored or stacked in an orderly manner.
- Stormwater runoff should be prevented from contacting stored solid waste through the use of berms, dikes, or other temporary diversion structures or through the use of measures to elevate waste from site surfaces.
- Solid waste storage areas should be located at least 50 ft from drainage facilities and watercourses and should not be located in areas prone to flooding or ponding.
- Except during fair weather, construction and highway planting waste not stored in watertight dumpsters should be securely covered from wind and rain by covering the waste with tarps or plastic.
- Segregate potentially hazardous waste from non-hazardous construction site waste.
- Make sure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.

- For disposal of hazardous waste, see WM-6, Hazardous Waste Management. Have hazardous waste hauled to an appropriate disposal and/or recycling facility.
- Salvage or recycle useful vegetation debris, packaging and surplus building materials when practical. For example, trees and shrubs from land clearing can be used as a brush barrier, or converted into wood chips, then used as mulch on graded areas. Wood pallets, cardboard boxes, and construction scraps can also be recycled.

**Costs**

All of the above are low cost measures.

**Inspection and Maintenance**

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur
- Inspect construction waste area regularly.
- Arrange for regular waste collection.

**References**

Processes, Procedures and Methods to Control Pollution Resulting from All Construction Activity, 430/9-73-007, USEPA, 1973.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.



Port of San Francisco  
Port-wide Maintenance Manual

**Appendix B – Port of San Francisco Hazard Communication Program**

**Port of San Francisco**  
**HAZARD COMMUNICATION PROGRAM**

**2015**

# HAZARD COMMUNICATION PROGRAM

## I. Introduction

- A. The Port of San Francisco has developed a comprehensive Hazard Communication Program which includes container labeling and other forms of warning, Material Safety Data Sheets and employee training. In addition to Hazcom training, all employees working in the field are certified as 24-hour Oil Spill Technicians under the HAZWOPER 29CFR1910.120(q)(6)(iii) standard.
- B. The program ensures employees will be informed about hazardous substances to which they are exposed on a routine basis or during reasonably foreseeable emergencies.
- C. The program meets the requirements set forth by Section 5194, California Code of Regulations, Title 8 (Hazard Communication).
- D. This written program outlines how each required element will be carried out, as well as the responsibilities of supervisors and employees in implementing the program.

## II. Scope of Program and Definitions

- A. This program includes all Port employees who work with hazardous substances.
  - 1. A Hazardous Substance presents a physical or health hazard or is included on the List of Hazardous Substances prepared by the Director of Industrial Relations.
  - 2. Health Hazards include cancer-causing materials, toxic agents, reproductive toxins, irritants, corrosives, sensitizers, and toxins, which act on the kidneys, brain and nervous systems, liver or blood forming organs of the body. Agents which damage the lungs, skin, eyes or mucous membranes are also included.
  - 3. Physical Hazards include combustible or flammable materials, compressed gases, explosives, organic peroxides, oxidizers, pyrophorics, unstable or water reactive materials.

Precise definitions of these substances are found in Appendix A of the standard.

- B. Consumer and Office Products

1. Consumer products are covered by the Consumer Products Safety Commission and the Hazard Communication Program does not apply under conditions of normal use. Unusual circumstances where these products are used in hazardous conditions are covered, however,
2. The standard also exempts office products such as pencils, pens, typewriter ribbons and other articles. Similarly, occasional use of a copy machine would not be covered. However, a copy machine operator who works with photocopying chemicals on a regular basis would be covered under the conditions of the standard.

### III. **Accessibility of Written Program**

Copies of this Written Program are available to any employee upon request to the Environmental Health and Safety Section (EH&S). Copies will be distributed to all supervisors and will be made available to all employees at each work center. A copy is available on the Port's Intranet page (PortWeb). A copy of this program will accompany partial and complete hazardous substance inventories and sets of Material Safety Data Sheets.

### IV. **Program Responsibilities**

- A. EH&S will administer the Hazard Communication Program. Section staff will obtain and review Material Safety Data Sheets (MSDS) as described below and will determine which employees are to be included in the program.

The section will also develop the training program for employees who work with hazardous substances. In addition, the section will provide guidelines regarding container labeling. EH&S will be available for consultation in developing Codes of Safe Practices for operations involving hazardous substances.

- B. Supervisors are responsible for the identification of hazardous substances in their work centers and will provide an inventory of all such materials. The supervisors will ensure that their employees are properly trained in safe work practices and that they are provided with protective equipment for all operations involving hazardous substances. Supervisors will be responsible for developing Codes of Safe Practices for all operations involving hazardous substances.
- C. Employees are responsible for informing themselves regarding the hazard of substances used in their work centers. Each employee will review the relevant Material Safety Data Sheet, safe practices and labels prior to beginning work with a hazardous substance. All employees are responsible for wearing protective gear when required. Employees are also responsible for using fans, fume extractors or other engineering controls, as directed by their supervisor.

- D. Employees will follow all safe work practices as taught in Hazardous Material Training, as well as emergency protocols. All unusual situations or unexpected hazards will be reported to supervisors as soon as possible.

**V. Hazard Determination**

- A. EH&S has the primary responsibility for determining what products constitute hazardous substances and which employees should be included in the Hazard Communication Program.
- B. The hazard determination conducted by the manufacturer as described in the Hazard Communication Standard will be used as presented on the MSDS. Port staff will conduct no independent hazard determination of substances used by employees.

**VI. Labeling of Hazardous Substances**

- A. All containers of hazardous substances that are used or stored at the Port of San Francisco must have a legible label, prominently displayed, which contains the following information:
  - 1) Identity of the hazardous substance
  - 2) Appropriate hazard warnings (including both physical and health hazards)
  - 3) The name and address of the manufacturer

The Port will accept manufacturers' labels which meet these requirements.

- B. This label must provide enough information to allow the user to match the product with the appropriate Material Safety Data Sheet (MSDS).
- C. Stationary containers, such as dip tanks or above ground storage tanks, must also be clearly labeled with the information above.
- D. In addition, containers used to transfer smaller amounts of material to a job site, for example, gasoline, must be labeled with an extra copy of the manufacturers' label or with a properly filled out generic label. These containers are known as "secondary" containers.
- E. Responsibility for ensuring all containers have labels displaying the required information has been assigned to:
  - 1) the Senior Storekeeper for any material which passes through the storeroom at Pier 50.

- 2) work center supervisors to ensure that labels are not removed or defaced and that unlabeled materials are promptly identified.
  - 3) employees, who are not permitted to use unlabeled or improperly labeled materials. Missing or inadequate labels should be reported to supervisors in a timely manner.
- F. Any material obtained outside the normal City purchasing routine must have a label and MSDS which meets the requirements of the Hazard Communication Standard. Monthly inspections of hazardous materials to ensure that labels are present and complete are required and are the responsibility of all supervisors.
- G. All improperly labeled products shall be returned to the storeroom for proper identification. EH&S will advise or assist in the proper labeling of all hazardous materials.
- H. No Port employee should remove or deface existing labels on incoming containers of hazardous substances, unless the container is immediately marked with the required information.

## **VII. Material Safety Data Sheets**

- A. An MSDS is written or printed material concerning a hazardous substance, which is prepared in accordance with the Hazard Communication Standard, 8 CAC 5194 (g).
- B. It is the policy of the Port of San Francisco that all employees working with hazardous substances shall be provided with written information regarding the physical or health hazards associated with these substances. As MSDSs are the primary means of communicating this information, the Port will obtain an MSDS for each hazardous substance used by employees.
- C. A full set of MSDS will be kept at the following locations:
- 1) Environmental Health and Safety Section, Pier 1
  - 2) The Storeroom, Pier 50.

Partial sets of MSDS will be kept in all shops. The partial sets will contain only the MSDSs for materials used in a particular shop. All MSDS sets will be available during regular working hours.

- D. Codes of Safe Practices designed to augment the information contained on the MSDS will be made available during each workshift to employees when they are in their work areas.

- E. Supervisors are responsible for obtaining MSDSs from vendors for their own work area. For all supplies ordered, supervisors should check the partial or complete sets of MSDS to see if the Port has an MSDS for at the desired product. If no MSDS is on file, the supervisor will notify the Senior Storekeeper at Pier 50.
1. If an MSDS is not available, the Storekeeper will request an MSDS from the manufacturer.
  2. If there is no response from the manufacturer, the Storekeeper will notify EH&S. EH&S will notify Cal-OSHA if necessary. If no MSDS can be obtained, the product will be properly disposed.
  3. EH&S will be forwarded the original of all MSDS obtained.
  4. The Storekeeper will hold chemicals for which an MSDS was requested on "will call". The ESHS will send a copy of the MSDS to the requestor. When the requestor presents the MSDS to the Storekeeper or Supply Supervisor, the product will be released.
- F. The ESHS will review all MSDS for accuracy, assign a number, file the original, and distribute copies to the MSDS sets for updating.
- G. If an MSDS is provided, but does not contain all the required information, the ESHS will contact the manufacturer directly.
- H. The ESHS will update the automated inventory of MSDS periodically, based on supervisor's inventories of the materials located in their shops. Full and partial sets of MSDS will be updated accordingly.
- I. Employees will consider use and disposal impact when making chemical purchasing decisions. Employees will use a less toxic alternative whenever possible.

## **VIII. Toxics Education and Training**

- A. The Toxics Control Management Program of the Department of Public Health has developed and implemented a training program for city employees who work with hazardous substances. The Port of San Francisco participates in the training program, and approximately 138 employees received general training (see below) in October 1987. The Port of San Francisco's Environmental Safety and Health Section will oversee make-up, annual refresher and new employees/transfer sessions to ensure all personnel who are in the Hazard Communication Program receive training.

B. The Toxics Control Management Program of the Department of Public Health developed curricula to be presented to city employees which provides training in Hazard Communication, Hazardous Waste and Hazardous Materials. Complete Outlines of the courses are included as Appendix A of this program. The classes are presented to groups of employees as follows:

1)	Supervisor Class Outline		
	Session I.	Hazard Communication	3 hrs.
	Session II.	Hazardous Waste	2 hrs.
	Session III.	Emergency Response	2 hrs.
	Session IV.	Communication and Resources	3 hrs.

- 6 -

2) Line Workers Class Outline

	Session I.	Hazard Communication Regulations	3 hrs.
	Session II.	Hazardous Waste and Emergency Response	2 hrs.

C. During the first half of 1988, Port staff who were unable to attend one or more of the required Toxics training classes attended make-up sessions at other City departments.

D. The ESHS will develop a training program for Port employees on specific substances or classes of substances used in individual work areas. This training will include information regarding the physical and health hazards of such substances, including measures employees can take to protect themselves from such hazard. Standard operating procedures and emergency response plans will be reviewed.

The Toxic Control Management Program will continue to provide assistance to ESHS in development of the training program. The ESHS will coordinate its training effort with the citywide program currently in effect.

E. Record-Keeping

Documentation of training class attendance will be kept by the Personnel office for review by interested parties.

## **IX. Inventory of Hazardous Substances**

The ESHS has prepared a list of all hazardous substances used by Port employees. This list, called the Hazardous Materials Inventory, is included as Appendix A of this program. (p. 11)



Appropriate Material Safety Data Sheets may be referenced for this inventory.

**X. Non-Routine Tasks/Unlabeled Pipes**

- A. Employees may be required to perform non-routine tasks which may include handling hazardous substances. Prior to beginning work on such projects, employees will be provided with information from their supervisor regarding potential hazards. This information will include standard operating procedures.
- B. These procedures will cover a description of the work to be performed, the materials involved, and the hazards associated with the operation. The employees will be provided with appropriate protective gear and training. Emergency and safety measures will be clearly communicated to employees prior to beginning work.
- C. Non-routine tasks which may involve exposure to hazardous substances may include the following:
  - 1) high energy materials or electrical systems
  - 2) highly toxic materials
  - 3) high pressure or high vacuum vessels
  - 4) fast moving or high-powered machinery
  - 5) molten materials
  - 6) high location, underwater or confined spaces
- D. Prior to beginning work on unlabeled pipes, employees will be informed as to the material contained in the pipe. The specific hazards associated with the material will be discussed by the employee and his or her supervisor, and the Material Safety Data Sheet for the material will be reviewed.

**XI. Contractors**

- A. Contractor employers with employee work on SFPC property will be informed about hazardous substances in the proximity or to which they will be exposed while performing their work. Appendix B includes a letter to all contractors outlining the SFPC's policy in this regard.

Port of San Francisco  
Port-wide Maintenance Manual

**Appendix C – Port of San Francisco Hazardous Materials  
Emergency Response Plan**

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## INTRODUCTION

The Port of San Francisco will operate and maintain its Maintenance facility at Pier 50D in a way that reduces the possibility of accidents. To achieve this goal, every employee shall become familiar with the proper use, storage, and handling of hazardous materials and shall follow appropriate work practices. **In the event of an accidental release of a hazardous material, employees will follow the procedures outlined in this plan.**

### I. EMERGENCY COORDINATORS

The Primary Emergency Coordinator is responsible for coordinating all emergency response actions at the facility. He/she is familiar with the operations of the business and has full access to the facility. In addition, he/she has the authority to make decisions during an emergency and will be available on a 24-hour basis. The Secondary Emergency Coordinator will work in conjunction with the Primary Emergency Coordinator or on his/her behalf.

The Emergency Coordinator will be responsible for notifying the hospital (listed in Section II of this plan) as often as is needed of any special medicine, equipment, or decontamination procedures that will be required to treat injuries and illnesses caused by the hazardous materials/wastes used at this business. Health and Safety will assist with this task by meeting with the clinic director and/or providing inventory information to the clinic.

Spilled hazardous materials and dirty absorbents may be considered hazardous waste. Hazardous waste cannot be thrown out with regular trash. Hazardous waste must be removed by a licensed hazardous waste transporter/contractor. The Emergency Coordinator will contact Health and Safety to arrange for removal of hazardous waste produced as a result of a spill or leak.

The Primary Emergency Coordinator is:

Tom Carter  
Deputy Director, Maintenance  
(415) 597-7904  
24-Hour Phone: (415) 274-0400

The Secondary Emergency Coordinators are:

Sue Greci  
Superintendent of Harbor  
Maintenance  
(415) 597-7922  
24-Hour Phone: (415) 274-0400

Tom Meisenbach  
Superintendent of Harbor  
Maintenance  
(415) 597-7908  
24-Hour Phone: (415) 274-0400

Emergency Coordinators may call upon the Health and Safety staff to assist them in responding to spills and to make required notifications.

Tim Felton (415) 819-7560  
Karen Taylor (415) 274-0579

## II. TELEPHONE DIRECTORY

**A. Fire, Police, Medical, or Hazardous Materials Emergency:** 911

**B. Hospital/Clinic:**

SFGH Occupational Health Services  
1001 Potrero Ave., Building 9  
(415) 206-8998

After Hours:  
Any Emergency Room

**C. Hazardous Waste Hauler/Emergency Clean-up Contractor used by business:**

The Port has a contract with Philip Services for hazardous waste hauling. For emergency response and clean-up operations outside of the scope of that contract, the Department of Public Works and the Department of Public Health have contracts. The Health and Safety Section will arrange for these services when needed.

**D. Business Person/Position who will report spills/leaks of Hazardous Materials/Wastes**

The law requires the business owner/designee to make oral and written reports of hazardous materials/hazardous wastes spills and leaks. After an uncontrolled spill or leak of a hazardous material/waste (i.e. a release that leaves the Pier 50D facility, reaches the bay or storm drain, and/or cannot be managed with existing personnel and equipment):

**Tim Felton, Industrial Hygienist, Health and Safety** (or his designee)

**WILL CALL:** S. F. Department of Public Health (415) 252-3900  
California Office of Emergency Services (800) 852-7550  
National Response Center (800) 424-8802

**WILL CALL:** S.F. Public Utilities Commission (415) 695-2020  
**When hazardous materials/waste spills/leaks into a sewer**

**WILL CALL:** Department of Fish & Game, OSPR (916) 445-0045  
or (916) 358-1300  
U.S. Coast Guard, Marine Safety Office (510) 437-3073  
**When oil spills to the bay**

**WILL CALL:** Cal. Office of Emergency Services (800) 852-7550  
**When oil is released from a Port-owned vessels**

**WILL WRITE REPORT TO:** Department of Toxics Substance Control (800) 852-7550  
700 Heinz St  
Berkeley, CA 94704  
**Within 15 days of a hazardous waste spill/leak**

**MAY CONTACT:** Bay Area Air Quality Management District (800) 792-0836  
California Fish and Game (707) 944-5512  
California Highway Patrol (707) 648-5550

CalTrans  
 Environmental Protection Agency  
 Poison Control Center

(415) 923-4444  
 (415) 744-2000  
 (415) 476-6600

### III. METHOD OF ALERTING EMPLOYEES AND OTHERS WITHIN THE FACILITY

When there is an emergency at the site, employees and other people within the facility will be alerted by voice or telephone.

There is also an audible fire and evacuation alarm in the building. The fire alarm is part of the sprinkler system and will sound if a flow or tampering is detected in the system and the fire department will be notified. In addition, there is a pull box located in the front of the building (near door to laborer's break room). When this is pulled the alarm is sounded, it also notifies a monitoring company. The evacuation alarm is a local "air raid" style alarm that is activated from to push button stations located at the front and middle of the building. This does not notify any emergency services. This is to evacuate Pier 50 D in a fire or non-fire emergency.

Unaccompanied visitors will be informed of the business's emergency alarm system upon entry to building.

### IV. METHOD OF ALERTING NEIGHBORS

When a hazardous material/waste accident at the business site may affect neighbors, the Emergency Coordinator (or his designee) will alert them by telephone or in person. The nearest neighbors are:

Tenant	Facility	Phone
California Sealift Terminals/MARAD ships	Pier 50 Face & Berth D	904-215-3336
SFCC Police Department	Pier 50, Shed A	415-553-1096
Coco, Dennis M (storage)	Pier 50, Shed A	650-738-5760
Diamond Freight System, Inc.	Pier 50, Shed A	415-537-9590
Habitat for Humanity (storage)	Pier 50, Shed A	415-406-1555
San Francisco Museum & Historical Society (storage)	Pier 50, Shed A	415-775-1111
CB2 Builders, Inc	Pier 50, Shed A	415-402-0360
Smail Hadjout	Pier 50, Shed A	415-378-3710
Bauer Intelligent Transportation, Inc.	Pier 50, Shed A	415-522-1212
Trish's Dishes, Inc.	Pier 50, Shed A	415-981-4318
Waterloo Beverages, LLC	Pier 50, Shed A	415-368-1948
Ferry Plaza Wine Merchant	Pier 50, Shed A	415-391-9400
A.S.F. Electric	Pier 50, Shed A	650-755-9032
Z Collection Inc.	Pier 50, Shed A	415-397-4119
Portco, Inc	Pier 50, Shed A	415-771-5200
BCCI Construction Co.(storage)	Pier 50, Shed B	415-995-6025
California Drywall Co. (storage)	Pier 50, Shed B	408-292-7500
Skyline Commercial Interiors, Inc.	Pier 50, Shed B	415-908-2502
Distillery 209 Ltd.	Pier 50, Shed B	415-695-0110
Sian, Kuldip Singh	Pier 50, Shed B	415-546-7110
Fine Line Group, Inc. (storage)	Pier 50, Shed B	415-777-4070

Principal Builders Inc. (storage)	Pier 50, Shed B	415-434-1500
Huckleberry Investment Corporation	Pier 50, Shed B	415-391-6060
Adina for Life, Inc	Pier 50, Shed B	415-543-4300
SFPD	Pier 50, Shed B	415-553-1096
Dawson-Clinton General Contractors, Inc.	Pier 50, Shed B	415-359-9991
Shelterbelt Builders, Inc	Pier 50, Shed B	510-841-0911
Avi Corporation	Pier 50, Shed B	415-440-3322
Overstreet Associates, Inc.	Pier 50, Shed B	510-828-3602
Maritol Enterprises, LLC	Pier 50, Shed B	415-722-9843
Weststar Marine Services	Pier 50, Shed C & Apron	415-495-3191
Bauer Intelligent Transportation, Inc.	Pier 50, Shed C	415-522-1212

**V. PROCEDURES FOR SHUTTING OFF GAS, ELECTRICITY, AND WATER**

Natural Gas is usually shut off at a valve near the meter. If the valve stem is aligned with the piping, the valve is open, if crossways to the piping, the valve is closed. The gas shutoff valve is located to the right side of the front entrance’s main rollup door.

All electricity is shut off at the main electrical service box. This box is often close to the meter. Individual circuits can be shut off at panel boxes. The shutoff may be by switch or breaker. Switch positions are marked “On” or “Off” next to the switch handle. The main power for the building is **high voltage**. The shut off locations is in the paint shop, with additional panels in the carpenters shop and the ironworker shop.

Water can be turned off at the main water valve. The main water valve is located to the right side of the front entrance’s main rollup door. Water can also be shut off at the street (between Pier 50 Shed B and 401 Terry Francois).

The fire sprinkler system valve is in front of the building.

Situations when	gas ↓	electricity ↓	and water should be shut off ↓
Earthquake:	if leaking	if lines damaged	if major leak
Fire:	yes	yes	no
Flood:	if leaking	yes	if causing
Other:	if leaking	if arcing	repairs

**After a problem where gas and/or electricity, and/or water has been turned off; care must be taken when the utility is turned back on.**

The Plumbing Supervisor, or other person designated by the Emergency Coordinator, shall be responsible for turning off or on gas and water, as necessary.

The Electrical Supervisor, or other person designated by the Emergency Coordinator, shall be responsible for turning off or on electricity as necessary.

**In the event that incident control is being exercised by an INCIDENT COMMANDER, then authority to restore utilities and to shut off fire suppression system must come from the INCIDENT COMMANDER.**

## VI. FACILITY EVACUATION PROCEDURE

In the event of an emergency at or near the facility, people within the facility shall leave the building using the exits on the north, east or west sides of the building and report to the North Parking Area/Utility Yard, Pier 50D.

Each shop supervisor shall account for his or her employees and provide information to the Emergency Coordinator.

Evacuation maps are posted at strategic locations within the facility.

During an earthquake it is best to duck, cover, and hold before evacuation. The best places in the facility are under desks and tables.

The areas that are most easily damaged during an earthquake and must be inspected or isolated immediately after an earthquake (before employees return into the building) are: walls, ceilings, roof, floors, foundation, structural framing, and parapets. The Port's Engineering Division is responsible for performing a rapid structural assessment, in accordance with ATC-20 guidelines, following earthquakes or other disasters.

## VII. SAFETY INFORMATION, MEDICAL DUTIES, AND RESCUES

Material Safety Data Sheets (MSDS) for hazardous materials used at the facility must be accessible in areas where employees may review them. MSDS are kept in binders in each shop, in an accessible and readily apparent area.

Only trained individuals should perform rescues, first aid or CPR. Many Port employees are trained in First Aid and CPR. **When rescue is necessary and when injuries are beyond basic first aid, call 911.**

## VIII. SPILLS & LEAKS OF HAZARDOUS MATERIALS

Spills and leaks of hazardous materials can damage facilities, injure workers, and harm the environment. It is best to prevent spills and leaks by taking precautions.

For the purposes of this categorization, a **process** can be a piece of equipment such as a forklift or emergency generator; an unattended activity such as water treatment; any of a huge variety of employee activities such as cleaning, painting, welding, roofing, auto repairing, contracting (e.g. building), etc.; and general processes such as photography, laundry, or laboratory. A facility may have a single process or multiple processes. For each **process** where hazardous materials are used at your facility, list the **hazardous materials used** and determine the **category** for each material. The container label and MSDS will usually give/indicate an appropriate **category**.

**Spill Response Procedures (Precautions and Control/Clean-Up Procedures)** for the following **categories** of hazardous materials are found in this Emergency Response Plan.

<b>Category</b>	<b>Examples</b>
-----------------	-----------------



<b>Compressed Gases – Flammable</b>	Acetylene, propane, butane
<b>Compressed Gases - Non-Flammable</b>	Oxygen, air, carbon dioxide, nitrogen, helium, or argon
<b>Liquids – Flammable</b>	Gasoline, methanol, ethanol, ethers, acetone, lacquers
<b>Liquids – Combustible</b>	Diesel fuel, kerosene, lubricating oils, oil paints, antifreeze
<b>Other Liquids</b>	Solvents/Poisons/Carcinogens (TCE, methylene chloride, latex paint, pesticides, herbicides, and liquid hazardous materials not listed in other categories)
<b>Other Solids</b>	Poisons/Carcinogens: (e.g. pesticides, herbicides, tar and mastics, welding rods, sand or rock dust with silica warning on container (usually bag) label, and solids with danger, toxic, poison, or carcinogen warnings on the label)
<b>Corrosive Chemicals (Corrosives)</b>	Liquids/solids/solutions such as acids, bases, salts, most water treatment chemicals; and solids such as cement, redi-mix, grout, stucco
<b>Oxidizing Chemicals (Oxidizers)</b>	Peroxides, nitric acid

<b>PROCESS</b>	<b>HAZARDOUS MATERIALS USED</b>	<b>CATEGORY</b>
Painting	Paints, solvents	Liquids – Flammable, Liquids – Combustible, Other Liquids
Welding, cutting, soldering	Welding rods, flux, compressed gases	Other Solids, Compressed Gasses – Flammable, Compressed Gasses – Non-Flammable
Using power tools	Fuels, lubricants	Liquids – Flammable, Liquids – Combustible, Other Liquids
Clearing clogged drains or sewer lines; treating grease traps	Concentrated acids and bases, solvents	Corrosive Chemicals
Patching holes in concrete	Cement	Corrosive Chemicals
Roof patching	Solvents, cleaners, cement, asphalt, adhesives	Liquids – Flammable, Liquids – Combustible, Other Liquids, Other Solids
Reshaping and repairing metal parts	Epoxies, sealants, lubricants, cutting fluids	Liquids – Flammable, Liquids – Combustible, Other Liquids
Cleaning parts, cleaning metal to be welded	Solvents, acids	Liquids – Combustible, Other Liquids, Corrosive Chemicals
Maintain and repair engines and mechanical	Lubricants, antifreeze, solvents, batteries	Liquids – Combustible, Other Liquids, Corrosive Chemicals

<b>PROCESS</b>	<b>HAZARDOUS MATERIALS USED</b>	<b>CATEGORY</b>
parts		
Repairing piers	Wood preservative	Liquids – Combustible
Applying pesticides and herbicides	Pesticides, herbicides	Other Liquids
Patching pavement	Asphalt	Liquids – Combustible, Other Solids
Cleaning and descaling boilers	Caustics	Corrosive Chemicals

## Precautions and Control/Clean-Up Procedure for Spills/Leaks of COMPRESSED GASES – FLAMMABLE

**Flammable compressed gases (fuels) include:** propane, butane, MAPP and acetylene that are contained in compressed gas cylinders. There may be little in the way of information or warnings on the cylinder so Material Safety Data Sheets need to be present.

### **Special precautions for flammable compressed gases are:**

Store away from oxidizing compressed gases such as oxygen.

Store away from heat, flame, direct sunlight, or possible electric arcs. Secure compressed gas cylinders in carts, to walls, etc so they remain upright. Compressed gas cylinders should be connected to a manifold or regulator or have a cylinder cap in place.

### **Protective equipment for flammable compressed gas leaks:**

- Safety Glasses/Goggles, Gloves, Boots
- Combustion gas/oxygen meter (available from H&S office)

### **Spill control equipment for flammable compressed gas leaks:**

- “Intrinsically safe” fan
- Cones and barrier tape

### **Control procedure for flammable compressed gases leaks:**

- ***Turn off compressed gas cylinder valve if safe to do so. Flammable compressed gases can explode from arcs of static electricity.***
- Evacuate area and deny area access
- Call 911 if unable to stop leak.

### **Decontamination procedure for flammable compressed gases leaks:**

- Aerate leak area prior to reentry
- Check area with combustible gas meter

**Disposal procedure for flammable compressed gases leaks:** None.

### **Employees should not clean up a flammable compressed gas leak if:**

***They have not been trained or are scared to do so; or***

- There is a source of ignition (electric, static electricity, heat, flame).
- There are other threatening materials released besides flammable compressed gas.
- There is a fire that threatens the cleanup area or scares the employee(s).
- There has been an earthquake and the building has not been structurally evaluated.

### **In such cases employees should:**

- Call for help from other employees
- Warn others
- Phone 911

## **Precautions and Control/Clean-Up Procedure for Spills/Leaks of COMPRESSED GASES - NON-FLAMMABLE**

**Non-flammable gases include:** Oxygen, nitrogen, helium, argon, carbon dioxide that are stored at high pressure and contained in compressed gas cylinders. There may be little in the way of information or warnings on the cylinder so Material Safety Data Sheets need to be present.

### **Special precautions for non-flammable compressed gases are:**

- Store away from flammable gases (fuels) such as acetylene, and other flammable or combustible materials.
- Store away from heat, open flame, or direct sunlight. Secure compressed gas cylinders in carts, to walls, etc so they remain upright. Compressed gas cylinders should be connected to a manifold or regulator or have a cylinder cap in place.

### **Personal protective equipment for non-flammable compressed gas leaks:**

- Safety Glasses/Goggles, Gloves, Boots

### **Spill control equipment for non-flammable compressed gas leaks:**

- Fan
- Combustion gas/oxygen meter (available from H&S office)

### **Control procedure for non-flammable compressed gases leaks:**

- Turn off compressed gas cylinder valve if safe to do so.
- Evacuate area

### **Decontamination procedure for non-flammable compressed gas leaks:**

- Aerate leak area
- Check oxygen level with gas meter

**Disposal procedure for non-flammable compressed gas leaks:** None.

### **Employees should not clean up a non-flammable compressed gas leak if:**

***They have not been trained or are scared to do so.***

- There are other threatening materials released besides non-flammable compressed gases.
- There is a fire that threatens the cleanup area or scares the employee(s).
- There has been an earthquake and the building has not been structurally evaluated.

### **In such cases employees should:**

- Call for help from other employees
- Warn others
- Phone 911

## Precautions and Control/Clean-Up Procedures for Spills/Leaks of LIQUIDS – FLAMMABLE

(Flammable liquids have flash points up to approximately 140° F)

**Flammable liquid chemicals include:** Methanol, alcohols, gasoline, solvents, mineral spirits, acetone.

### Special precautions for flammable liquids are:

*Note: Flammable storage containers must comply with OSHA 29CFR1910.106 and NFPA Code 30.*

- Store away from oxidizers, heat, flame, direct sunlight, and electric arcs.
- Store in flammable cabinets (when >10 gallons in use).
- To reduce static buildup, ground all large dispensing containers and bond to receiving container
- Keep lids and caps tightly closed
- Keep containers labeled.
- Dispose of or double contain (overpack) any material that appears to be leaking or is not sound.

### Protective equipment for flammable liquid spills/leaks:

- Goggles and neoprene gloves are mandatory.
- Boots
- Combustible gas/oxygen meter (available from H&S office)

### Spill control equipment for flammable liquid spills/leaks:

- Absorbent (sand/clay/kitty litter). Do not use cellulose absorbents such as sawdust.
- Plastic or non-sparking shovel and broom
- Metal container
- “Intrinsically safe” fan
- Barrier tape and cones
- Pigs, pillows, mats, dams
- Hydrophobic mops

### Control procedure for flammable liquids spills/leaks:

- Note: Many flammable liquids can ignite from static electricity
- Shut off equipment and sources of ignition
- Dike perimeter of spill; only if safe to do so. DO NOT INHALE VAPORS.
- Cover all spill/leak material with absorbent
- Ventilate spill/leak
- Evacuate area
- Deny area access

### Decontamination procedure for flammable liquids spills/leaks:

- Put contaminated rags in metal container with tight fitting lid
- Put contaminated absorbent into a metal container
- Scrub/rinse contaminated area w/soap-water
- Wash any spill on skin

### Disposal procedure for flammable liquid spills/leaks:

- Dispose of flammable liquid waste and contaminated materials as hazardous waste.

### Employees should not clean up flammable liquid spills/leaks if:

- ***They have not been trained or are scared to do so***
- Absorbent or container is not available.
- There is a source of ignition (electric, static electricity, heat, flame)
- There is possibility of electric shock
- There are other threatening materials besides flammable liquids
- There is a fire that threatens the cleanup area or scares the employee(s)
- There was an earthquake and the building has not been structurally evaluated

### In such cases employees should:

- Call for help from other employees
- Warn others.
- Call 911

## Precautions, Control, & Clean-Up Procedures for Spills/Leaks of LIQUIDS – COMBUSTIBLE

*Combustible liquids have flash points between 140° and 200° F (approximately)*

**Combustible liquid chemicals include:** Lubricating and hydraulic oils; brake, power steering, and transmission fluids; diesel fuels; kerosene; many cleaners and solvents; most undiluted radiator coolant; many greases; Copernate; and paint thinner. Combustible container label and Material Safety Data Sheets state material is a “combustible liquid”.

### Special precautions for combustible liquids are:

- Store away from oxidizers, heat, flame, and electric arcs.
- Treat heated combustible liquids as if they are flammable liquids.
- Keep containers labeled
- Keep lids and caps tightly closed
- Double contain (overpack container) materials if leakage is detected

### Personal protective equipment for combustible liquids spills/leaks:

- Safety Glasses/Goggles, Neoprene or Nitrile Gloves, Boots

### Spill control equipment for combustible liquids spills/leaks:

- Floor sweep absorbent (sand/clay/kitty litter) or a hydrophobic mop. DO NOT use cellulose absorbents such as sawdust.
- Shovel and broom
- Fan
- Labeled metal container with tight fitting lid (for rags or for absorbent)
- Barrier tape and cones
- Pigs, pillows, mats, & dams

### Control procedure for combustible liquid spills/leaks:

- **Shut off equipment and sources of ignition, upright container**
- **Dike perimeter of spill. DO NOT INHALE VAPORS.**
- Cover all spill/leak material with absorbent
- Ventilate spill/leak area
- Evacuate area
- Deny area access

### Decontamination procedure for combustible liquids spills/leaks:

- Put contaminated rags and absorbent in metal container with tight fitting lid
- Scrub/rinse contaminated area w/compatible detergent/water.
- Wash any spill on skin

### Disposal procedure for combustible liquids spills/leaks:

- Recycle combustibles, where possible
- Dispose of combustible waste and contaminated materials as hazardous waste

### Employees should not clean up combustible liquids spills/leaks if:

- **They have not been trained or are scared to do so or if absorbent//container are not available.**
- There is a source of ignition (electric, heat, flame, static)
- There is possibility of electric shock
- There are other threatening materials besides combustible liquids
- There is a fire that threatens the cleanup area or scares the employee(s)
- There was an earthquake and the building has not been structurally evaluated.

### In such cases employees should:

- Call for help from other employees
- Warn other employees/others
- Phone 911

## Precautions and Control/Clean-Up Procedures for Spills/Leaks of OTHER LIQUIDS (SOLVENTS, POISONS, CARCINOGENS, etc.)

**Other liquid chemicals include:** Solvents such as TCE, methylene chloride; liquid pesticides and herbicides; latex paint; cleaners/surfactants, and other hazardous liquids not listed in other categories. Material Safety Data Sheets need to be present.

### Special precautions for other liquids are:

- ***This is a broad category of materials that can cause acute or chronic illness depending upon the material and the exposure. Good housekeeping is essential for preventing exposure through skin, eyes, mouth, and lungs.***
- Keep containers labeled
- Keep lids and caps tightly closed
- Double contain materials if practical
- Dispose of any material that appears to be leaking or whose container is not completely sound
- Do not inhale vapors

### Personal protective equipment for other liquids spills/leaks:

- Goggles/Safety glasses, Gloves, Boots

### Spill control equipment for other liquid spills/leaks:

- Floor sweep absorbent (sand/clay/kitty litter).
- Shovel and broom
- Container
- Fan
- Barrier tape and cones
- Pigs, pillows, mats, & dams

### Control procedure for other liquid spills/leaks:

- DO NOT INHALE VAPORS.
- Upright the container
- Apply absorbent
- Dike perimeter of spill
- Cover all spill/leak material
- Ventilate spill/leak area
- Evacuate area
- Deny area access

### Decontamination procedure for other liquids spills/leaks:

- Put (shovel) contaminated absorbent into a container.
- Scrub/rinse contaminated area w/soap-water.
- Wash any spill on skin

### Disposal procedure for other liquid spills/leaks:

- Small amounts of contaminated absorbent can undergo evaporation if there is a safe place to do it
- Other waste is likely hazardous waste and must be disposed of accordingly

### Employees should not clean up other liquid spills/leaks if:

- ***They have not been trained or are scared to do so or if absorbent or container is not available***
- There is possibility of electric shock
- There are other threatening materials released besides other liquids
- There is a fire that threatens the cleanup area or scares the employee(s)
- There has been an earthquake and the building has not been structurally evaluated

### In such cases employees should:

- Call for help from other employees
- Warn other employees/others
- Phone 911

## **Precautions and Control/Clean-Up Procedures for Spills/Leaks of OTHER SOLIDS (POISONS, CARCINOGENS, etc)**

**Other solid chemicals include:** Solid pesticides and herbicides; tar and mastics; welding rods, sand or rock dust in containers carrying a silica warning; chemicals with “poison”, “carcinogen” “toxic”, “danger”, or “irritant” on the label or on the Material Safety Data Sheet and other hazardous solids not listed in other categories.

### **Special precautions for other solids are:**

- ***This is a broad category of materials that can cause acute or chronic illness depending upon the material and the exposure.***
- ***Good housekeeping is essential for preventing exposure through skin, eyes, mouth, and lungs.***
- Keep containers labeled (check periodically)
- Keep lids and caps tightly closed
- Double contain materials if possible
- Dispose of any material that appears to be leaking or whose container is not completely sound

### **Personal protective equipment for other solids spills/leaks:**

- Goggles/Safety glasses, Gloves, Boots

### **Spill control equipment for other solids spills/leaks:**

- Shovel and broom
- Metal container
- Barrier tape and cones
- Broom

### **Control procedure for other solids spills/leaks:**

- Upright container
- Ventilate spill/leak area, if necessary and it can be done without creating dust
- Evacuate area
- Deny area access

### **Decontamination procedure for other solids spills/leaks:**

- Put (shovel) contaminated solid into a container
- Scrub/rinse contaminated area w/soap-water
- Wash any spill on skin

### **Disposal procedure for other solids spills/leaks:**

- Some solid waste is hazardous waste and must be disposed of accordingly.

### **Employees should not clean up other solids spills/leaks if:**

***They have not been trained or are scared to do so or if absorbent or container is not available***

- There is possibility of electric shock
- There are other threatening materials released besides other solids
- There is a fire that threatens the cleanup area or scares the employee(s)
- There has been an earthquake and the building has not been structurally evaluated

### **In such cases employees should:**

- Call for help from other employees
- Warn other employees/others
- Phone 911



## Precautions and Control/Clean-Up Procedures for Spills/Leaks of CORROSIVE CHEMICALS

**Corrosive chemicals include:** Acids (pH less than 2) such as muriatic acid, sulfuric (battery) acid, phosphoric acid, fluxes. Or bases (caustics, pH greater than 12.5) such as sodium hydroxide, potassium hydroxide, and ammonium hydroxide, water treatment chemicals, and drain cleaners. Corrosive container labels and Material Safety Data Sheets are required to state "corrosive".

### Special precautions for corrosives are:

- **CORROSIVES HAVE SEVERE EYE DAMAGE POTENTIAL**
- Both eye and skin protection is required.
- An eyewash capable of running for 15 minutes must be within 10 seconds of corrosive handling/storage
- Periodically test eyewash/shower
- Provide secondary containment or corrosive cabinets for corrosives
- It is best to not wear contact lenses
- Periodically check neutralizer supply
- Maintain separate storage areas for "acidic" and "basic" corrosive materials

### Personal protective equipment for corrosives spills/leaks:

- Chemical Goggles (no vents), Face shield, Gloves, Apron, Boots

### Spill control equipment for corrosive spills/leaks:

- Neutralizer
- Absorbent (sand/clay/kitty liter)
- Pads, pigs, etc.
- Plastic shovel and broom
- Plastic container or bags
- Barrier tape/cones to deny access

### Control procedure for corrosive spills/leaks:

- Stop source if possible
- Apply neutralizer/absorbent as needed
- Put neutralized contaminated absorbent into a labeled plastic container
- Barrier tape spill area if tracking could spread the spill/leak.

### Decontamination procedure for corrosives spills/leaks:

- Wash shovel with water
- Wash contaminated area with water and dry with paper towels or similar
- Wash hands and any splashes on cloths with water and dry.

### Disposal procedure for corrosives spills/leaks:

- Mostly dry, near neutral neutralized contaminated corrosive materials can be put to garbage
- Strong acid (< pH = 2) or strong base (>pH = 12.5) is hazardous waste.
- Inform the SF Public Utilities Commission Bureau of Environmental Regulation and Management at 695-7310 if a corrosive spill/leak has gone down sewer drain.

### Employees should not clean up a corrosive spill/leak if:

- **They have not been trained or are scared to do so or equipment is not available.**
- There is possibility of electric shock
- There are other threatening materials released besides corrosives
- There is a fire that threatens the cleanup area or scares the employee(s)
- There has been an earthquake and the building has not been structurally evaluated.

### In such cases employees should:

- Call for help from other employees
- Warn others
- Phone 911

## Precautions and Control/Clean-Up Procedures for Spills/Leaks of OXIDIZING CHEMICALS

**Oxidizing chemicals include:** Oxidizing chemicals can exist in solid form as well as solutions. Inorganic acids such as nitric acid; hydrogen peroxide\*\* and peroxides, and salts such as any nitrate, Oxidizer container labels and Material Safety Data Sheets state "oxidizer".

*\*\* Hydrogen peroxide at less than or equal 30% is classified as an oxidizer. Above 30% hydrogen peroxide should be treated as a shock sensitive.*

### Special precautions for oxidizers are:

- Keep oxidizers away from eyes and skin
- Oxidizing chemicals can react violently with many other materials
- Store oxidizers by themselves (not alphabetically with other chemicals)
- Do not store oxidizers near reducing agents (fuels, flammable compressed gases, flammable liquids, combustible liquids, solvents, plastic, paper, sawdust, or wood)

### Personal protective equipment for oxidizers spills/leaks:

- Goggles, Gloves, Apron, Boots

### Spill control equipment for oxidizers spills/leaks:

- **Do NOT use straw or plastic brooms. Do NOT use regular or hydrophilic mops.**
- Absorbent (non-organic) such as sand/clay/kitty litter
- Metal shovel
- Metal container
- Barrier tape and cones

### Control procedure for oxidizers spills/leaks:

- **Unless suggested by MSDS, DO NOT neutralize oxidizing agents with reducing agents. Doing so can cause rapid heat buildup, fire, or even explosion.**
- Apply absorbent if needed (**DO not use cellulose or other organic absorbents such as saw dust**)
- Put neutralized contaminated absorbent into a metal container
- Deny area access.

### Decontamination procedure for oxidizer spills/leaks:

- Wash shovel with water
- Ensure metal container does not leak
- Wash contaminated area with water and dry with paper towels or similar
- Wash hands and any splashes with water and dry

### Disposal procedure for oxidizer spills/leaks:

- Oxidizer waste is hazardous waste and must be disposed of accordingly.
- Small amounts of dilute oxidizer waste can be flushed to the sewer (e.g. bleach)

### Employees should not clean up an oxidizer spill/leak if:

- **They have not been trained to do so or are scared to do so or absorbent is not available.**
- There is possibility of electric shock
- There are other threatening materials released/present besides oxidizers
- There is a possibility that the oxidizers may cause a fire or a fire already threatens the cleanup area
- There has been an earthquake and the building has not been structurally evaluated.

### In such cases employees should:

- Call for help from other employees.
- Warn others.
- Phone 911.

# HAZARD COMMUNICATION PROGRAM

## I. Introduction

- A. The Port of San Francisco has developed a comprehensive Hazard Communication Program which includes container labeling and other forms of warning, Material Safety Data Sheets and employee training. In addition to Hazcom training, all employees working in the field are certified as 24-hour Oil Spill Technicians under the HAZWOPER 29CFR1910.120(q)(6)(iii) standard.
- B. The program ensures employees will be informed about hazardous substances to which they are exposed on a routine basis or during reasonably foreseeable emergencies.
- C. The program meets the requirements set forth by Section 5194, California Code of Regulations, Title 8 (Hazard Communication).
- D. This written program outlines how each required element will be carried out, as well as the responsibilities of supervisors and employees in implementing the program.

## II. Scope of Program and Definitions

- A. This program includes all Port employees who work with hazardous substances.
  - 1. A Hazardous Substance presents a physical or health hazard or is included on the List of Hazardous Substances prepared by the Director of Industrial Relations.
  - 2. Health Hazards include cancer-causing materials, toxic agents, reproductive toxins, irritants, corrosives, sensitizers, and toxins, which act on the kidneys, brain and nervous systems, liver or blood forming organs of the body. Agents which damage the lungs, skin, eyes or mucous membranes are also included.
  - 3. Physical Hazards include combustible or flammable materials, compressed gases, explosives, organic peroxides, oxidizers, pyrophorics, unstable or water reactive materials.

Precise definitions of these substances are found in Appendix A of the standard.

- B. Consumer and Office Products

1. Consumer products are covered by the Consumer Products Safety Commission and the Hazard Communication Program does not apply under conditions of normal use. Unusual circumstances where these products are used in hazardous conditions are covered, however,
2. The standard also exempts office products such as pencils, pens, typewriter ribbons and other articles. Similarly, occasional use of a copy machine would not be covered. However, a copy machine operator who works with photocopying chemicals on a regular basis would be covered under the conditions of the standard.

### III. **Accessibility of Written Program**

Copies of this Written Program are available to any employee upon request to the Environmental Health and Safety Section (EH&S). Copies will be distributed to all supervisors and will be made available to all employees at each work center. A copy is available on the Port's Intranet page (PortWeb). A copy of this program will accompany partial and complete hazardous substance inventories and sets of Material Safety Data Sheets.

### IV. **Program Responsibilities**

- A. EH&S will administer the Hazard Communication Program. Section staff will obtain and review Material Safety Data Sheets (MSDS) as described below and will determine which employees are to be included in the program.

The section will also develop the training program for employees who work with hazardous substances. In addition, the section will provide guidelines regarding container labeling. EH&S will be available for consultation in developing Codes of Safe Practices for operations involving hazardous substances.

- B. Supervisors are responsible for the identification of hazardous substances in their work centers and will provide an inventory of all such materials. The supervisors will ensure that their employees are properly trained in safe work practices and that they are provided with protective equipment for all operations involving hazardous substances. Supervisors will be responsible for developing Codes of Safe Practices for all operations involving hazardous substances.
- C. Employees are responsible for informing themselves regarding the hazard of substances used in their work centers. Each employee will review the relevant Material Safety Data Sheet, safe practices and labels prior to beginning work with a hazardous substance. All employees are responsible for wearing protective gear when required. Employees are also responsible for using fans, fume extractors or other engineering controls, as directed by their supervisor.

- D. Employees will follow all safe work practices as taught in Hazardous Material Training, as well as emergency protocols. All unusual situations or unexpected hazards will be reported to supervisors as soon as possible.

**V. Hazard Determination**

- A. EH&S has the primary responsibility for determining what products constitute hazardous substances and which employees should be included in the Hazard Communication Program.
- B. The hazard determination conducted by the manufacturer as described in the Hazard Communication Standard will be used as presented on the MSDS. Port staff will conduct no independent hazard determination of substances used by employees.

**VI. Labeling of Hazardous Substances**

- A. All containers of hazardous substances that are used or stored at the Port of San Francisco must have a legible label, prominently displayed, which contains the following information:
  - 1) Identity of the hazardous substance
  - 2) Appropriate hazard warnings (including both physical and health hazards)
  - 3) The name and address of the manufacturer

The Port will accept manufacturers' labels which meet these requirements.

- B. This label must provide enough information to allow the user to match the product with the appropriate Material Safety Data Sheet (MSDS).
- C. Stationary containers, such as dip tanks or above ground storage tanks, must also be clearly labeled with the information above.
- D. In addition, containers used to transfer smaller amounts of material to a job site, for example, gasoline, must be labeled with an extra copy of the manufacturers' label or with a properly filled out generic label. These containers are known as "secondary" containers.
- E. Responsibility for ensuring all containers have labels displaying the required information has been assigned to:
  - 1) the Senior Storekeeper for any material which passes through the storeroom at Pier 50.

- 2) work center supervisors to ensure that labels are not removed or defaced and that unlabeled materials are promptly identified.
  - 3) employees, who are not permitted to use unlabeled or improperly labeled materials. Missing or inadequate labels should be reported to supervisors in a timely manner.
- F. Any material obtained outside the normal City purchasing routine must have a label and MSDS which meets the requirements of the Hazard Communication Standard. Monthly inspections of hazardous materials to ensure that labels are present and complete are required and are the responsibility of all supervisors.
- G. All improperly labeled products shall be returned to the storeroom for proper identification. EH&S will advise or assist in the proper labeling of all hazardous materials.
- H. No Port employee should remove or deface existing labels on incoming containers of hazardous substances, unless the container is immediately marked with the required information.

## **VII. Material Safety Data Sheets**

- A. An MSDS is written or printed material concerning a hazardous substance, which is prepared in accordance with the Hazard Communication Standard, 8 CAC 5194 (g).
- B. It is the policy of the Port of San Francisco that all employees working with hazardous substances shall be provided with written information regarding the physical or health hazards associated with these substances. As MSDSs are the primary means of communicating this information, the Port will obtain an MSDS for each hazardous substance used by employees.
- C. A full set of MSDS will be kept at the following locations:
- 1) Environmental Health and Safety Section, Pier 1
  - 2) The Storeroom, Pier 50.

Partial sets of MSDS will be kept in all shops. The partial sets will contain only the MSDSs for materials used in a particular shop. All MSDS sets will be available during regular working hours.

- D. Codes of Safe Practices designed to augment the information contained on the MSDS will be made available during each workshift to employees when they are in their work areas.

- E. Supervisors are responsible for obtaining MSDSs from vendors for their own work area. For all supplies ordered, supervisors should check the partial or complete sets of MSDS to see if the Port has an MSDS for at the desired product. If no MSDS is on file, the supervisor will notify the Senior Storekeeper at Pier 50.
1. If an MSDS is not available, the Storekeeper will request an MSDS from the manufacturer.
  2. If there is no response from the manufacturer, the Storekeeper will notify EH&S. EH&S will notify Cal-OSHA if necessary. If no MSDS can be obtained, the product will be properly disposed.
  3. EH&S will be forwarded the original of all MSDS obtained.
  4. The Storekeeper will hold chemicals for which an MSDS was requested on "will call". The ESHS will send a copy of the MSDS to the requestor. When the requestor presents the MSDS to the Storekeeper or Supply Supervisor, the product will be released.
- F. The ESHS will review all MSDS for accuracy, assign a number, file the original, and distribute copies to the MSDS sets for updating.
- G. If an MSDS is provided, but does not contain all the required information, the ESHS will contact the manufacturer directly.
- H. The ESHS will update the automated inventory of MSDS periodically, based on supervisor's inventories of the materials located in their shops. Full and partial sets of MSDS will be updated accordingly.
- I. Employees will consider use and disposal impact when making chemical purchasing decisions. Employees will use a less toxic alternative whenever possible.

## **VIII. Toxics Education and Training**

- A. The Toxics Control Management Program of the Department of Public Health has developed and implemented a training program for city employees who work with hazardous substances. The Port of San Francisco participates in the training program, and approximately 138 employees received general training (see below) in October 1987. The Port of San Francisco's Environmental Safety and Health Section will oversee make-up, annual refresher and new employees/transfer sessions to ensure all personnel who are in the Hazard Communication Program receive training.

B. The Toxics Control Management Program of the Department of Public Health developed curricula to be presented to city employees which provides training in Hazard Communication, Hazardous Waste and Hazardous Materials. Complete Outlines of the courses are included as Appendix A of this program. The classes are presented to groups of employees as follows:

1)	Supervisor Class Outline		
	Session I.	Hazard Communication	3 hrs.
	Session II.	Hazardous Waste	2 hrs.
	Session III.	Emergency Response	2 hrs.
	Session IV.	Communication and Resources	3 hrs.

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2) Line Workers Class Outline

	Session I.	Hazard Communication Regulations	3 hrs.
	Session II.	Hazardous Waste and Emergency Response	2 hrs.

C. During the first half of 1988, Port staff who were unable to attend one or more of the required Toxics training classes attended make-up sessions at other City departments.

D. The ESHS will develop a training program for Port employees on specific substances or classes of substances used in individual work areas. This training will include information regarding the physical and health hazards of such substances, including measures employees can take to protect themselves from such hazard. Standard operating procedures and emergency response plans will be reviewed.

The Toxic Control Management Program will continue to provide assistance to ESHS in development of the training program. The ESHS will coordinate its training effort with the citywide program currently in effect.

E. Record-Keeping

Documentation of training class attendance will be kept by the Personnel office for review by interested parties.

**IX. Inventory of Hazardous Substances**

The ESHS has prepared a list of all hazardous substances used by Port employees. This list, called the Hazardous Materials Inventory, is included as Appendix A of this program. (p. 11)



Appropriate Material Safety Data Sheets may be referenced for this inventory.

**X. Non-Routine Tasks/Unlabeled Pipes**

- A. Employees may be required to perform non-routine tasks which may include handling hazardous substances. Prior to beginning work on such projects, employees will be provided with information from their supervisor regarding potential hazards. This information will include standard operating procedures.
- B. These procedures will cover a description of the work to be performed, the materials involved, and the hazards associated with the operation. The employees will be provided with appropriate protective gear and training. Emergency and safety measures will be clearly communicated to employees prior to beginning work.
- C. Non-routine tasks which may involve exposure to hazardous substances may include the following:
  - 1) high energy materials or electrical systems
  - 2) highly toxic materials
  - 3) high pressure or high vacuum vessels
  - 4) fast moving or high-powered machinery
  - 5) molten materials
  - 6) high location, underwater or confined spaces
- D. Prior to beginning work on unlabeled pipes, employees will be informed as to the material contained in the pipe. The specific hazards associated with the material will be discussed by the employee and his or her supervisor, and the Material Safety Data Sheet for the material will be reviewed.

**XI. Contractors**

- A. Contractor employers with employee work on SFPC property will be informed about hazardous substances in the proximity or to which they will be exposed while performing their work. Appendix B includes a letter to all contractors outlining the SFPC's policy in this regard.