Water Pollution Control Plan (WPCP)
for Oak Woodland Habitat Mitigation
for the Willow Road Extension and Hwy 101 Interchange Project

Contract Number:
300129.09

Project Site Address
Latitude 35.029079° / Longitude -120.465207°

Prepared for:
San Luis Obispo County
Deparmtent of Public Works
Room 207 Cunty Government Center
San Luis Obispo CA 93408

Submitted by:
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Table of Contents

WPCP Attachments

Section 1 WPCP Responsibilities

1.1 WPCP Objectives

This WPCP has been designed to address the following objectives:

1. All pollutants and their sources, including sources of sediment associated with construction, construction site erosion and all other activities associated with construction activity are controlled;
2. Where not otherwise required to be under a Regional Water Board permit, all non-storm water discharges are identified and either eliminated, controlled, or treated;
3. Site BMPs are effective and result in the reduction or elimination of pollutants in storm water discharges and authorized non-storm water discharges from construction activity to the best available technology economically achievable (BAT) / best conventional pollutant control technology (BCT) standard;
4. Calculations and design details as well as Best Management Practices (BMPs) controls for site run-on are complete and correct, and
5. Stabilization BMPs installed to reduce or eliminate pollutants after construction are completed.

1.2 WPCP Availability and Implementation

The WPCP shall be available at the construction site during working hours while construction is occurring and shall be made available upon request by a City, State or Federal inspector. When the original WPCP is retained by a crewmember in a construction vehicle and is not currently at the construction site, copies of the BMPs and map/drawing will be left with the field crew and the original WPCP shall be made available via a request by radio/telephone.

1.3 Certifications

The LRP makes the following certification when signing any PRDs:

> *"I certify under a penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."*

_____ _____

Date

Qualified SWPPP Developer Certification

The WPCP for this project was developed by Cheryl A. Lenhardt, PE, Lenhardt Engineering Inc. Ms. Lenhardt has the following registrations or certifications:

- California Registered Professional Civil Engineer, No. C65306
- Certified Professional in Erosion and Sediment Control (CPESC), No. 4103
- Qualified SWPPP Developer (QSD), Certificate No. 00102

The QSD makes the following certification when signing the WPCP:

"I certify that this WPCP was developed, based upon available project and site information and industry standards, to meet the objectives identified in Section 1.1 of this WPCP.

_____ _____

Cheryl A. Lenhardt, PE/QSD Date

Water Pollution Control Manager Certification

The Contractor will funciton as the Water Pollution Control Manager (WPCM). They will provide day-to-day site management for the project.

The WPCM makes the following certification when signing the WPCP:

"I certify that I understand and agree to comply with the terms and conditions of the WPCP and agree to implement corrective actions identified within 72 hours of notification. I understand that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and could subject me to criminal, civil and/or administrative proceedings."

_____ _____

Date

1.4 Required Non-Compliance Reporting

It is the responsibility of the County to properly document reportable discharges.

If a discharge occurs or if the project receives a written notice or order from a regulatory agency, the LRP, QSP or WPCM shall immediately notify the County within 24 hours of the discharge event, notice, or order.

1.5 Retention of Records

The WPCM maintain a paper or electronic copy of all inpsection records for three years from the date generated or date submitted, whichever is last. These records must be available at the construction site until construction is completed.

The discharger shall furnish the Regional Water Board, State Water Board, or U.S. EPA, within a reasonable time, any requested information to determine compliance with the Water Pollution Control Plan.

1.6 Inspection and Entry

The discharger shall allow the Regional Water Board, State Water Board, U.S. EPA, and/or, in the case of construction sites which discharge through a municipal separate storm sewer, an authorized representative of the municipal operator of the separate storm sewer system receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

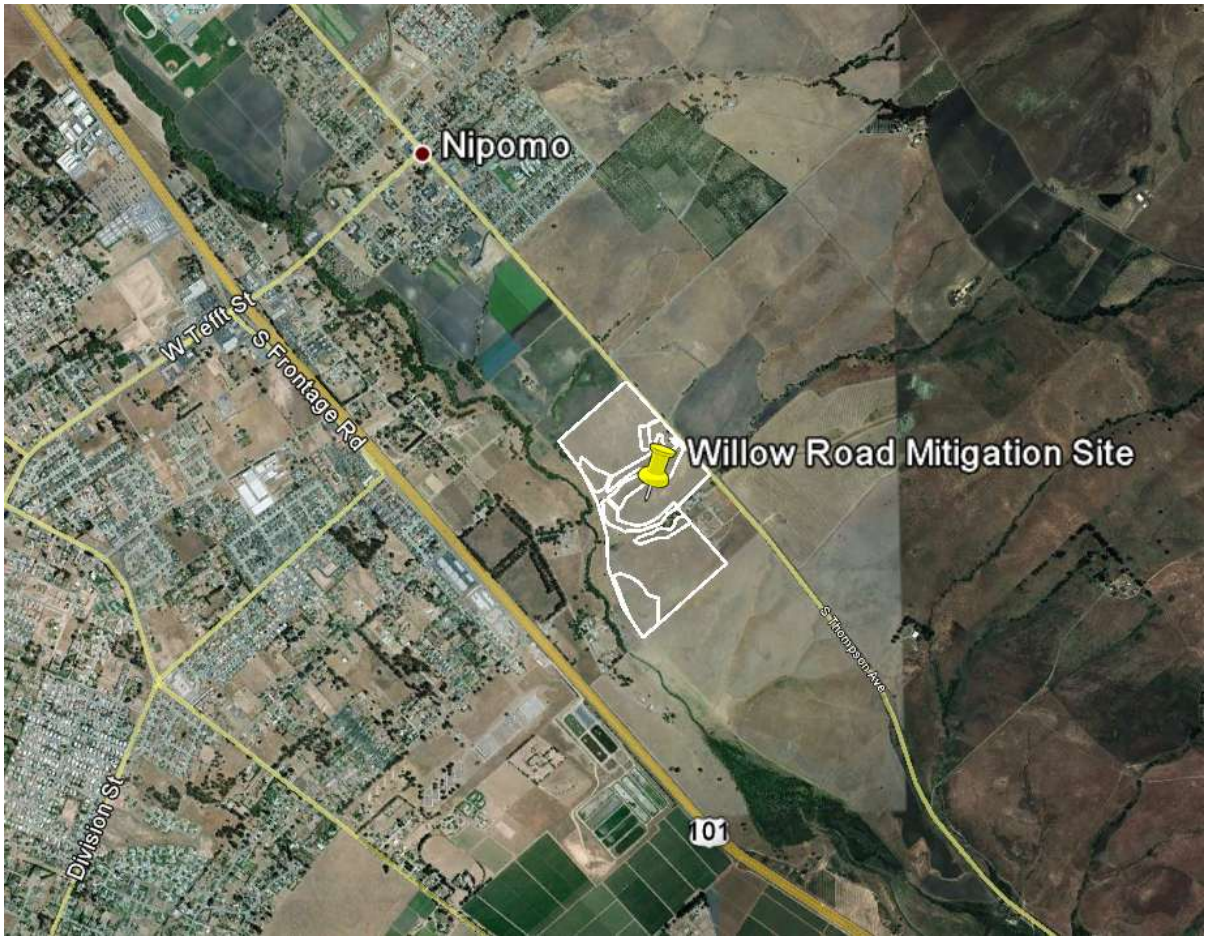
1. Inspect at reasonable times the complete construction site, including any off-site staging areas or material storage areas, and the erosion/sediment controls; and
2. Sample or monitor at reasonable times for the purpose of ensuring compliance.

Section 2 Project Information

2.1 Introduction and Project Description

This project intends to create new Oak Woodland Habitat near the Rancho Nipomo Dana Adobe Historical Park (Dana Adobe Park). Germinated Oak Acorns will be placed in augured holes within a 23 acre site. A new water booster pumping station and tank fill system will be installed at the site. Water from an existing well located next to the new water booster pump will be used to fill the tank. The work also includes site piping, irrigation, control valve installation, landscaping, proposed utility pole and overhead electrical crossing, installing permanent fencing, and other such items or detail work not mentioned herein that are required by the Plans, the Standard Specifications, Standard Plans, or these Special Provisions.

The project is located along Thompson Road in Nipomo, across from the Historic Dana Adobe, and is owned by the County of San Luis Obispo. The project area is identified in the exhibit below.



2.2 Unique Site Features

Per the Land Conservancy web site, “This 100-acre site has historically been used for hunting by the Chumash, and for grazing and crop production in more recent years.”

Cultural resource areas must be avoided during project implementation. All irrigation, planting, and fence installation activities must be coordinated with a qualified archaeologist and/or the Dana Adobe Nipomo Amigos (DANA) to ensure that cultural resources are avoided.
In the event archaeological resources are unearthed or discovered during any construction activities, the following standards apply:

A. Construction activities shall cease, and the Engineer shall be notified. The Engineer will notify the Environmental Coordinator and Planning Department so that the extent and location of discovered materials may be recorded by a qualified archaeologist, and disposition of artifacts may be accomplished in accordance with state and federal law.

B. In the event archaeological resources are found to include human remains, or in any other case where human remains are discovered during construction, the County Coroner is to be notified in addition to the Planning Department and Environmental Coordinator so that proper disposition may be accomplished.

Minor run-on to the site occurs directly from Thompson Avenue. The majority of run-on to the site is conveyed by two culverts under Thompson road. However, these drainage channels are ephemera, and are likely to be dry throughout most of the work..

There are no known endangered species within the project limits.

The majority of site soils are classified as hydrologic soil group ‘D’ Group D soils have a very slow infiltration rate when thoroughly wet and typically consist of clays soils with high shrink-swell potential. A small section of hydrologic soil group C’ soils are located to the west of the site.

2.3 Approach

This WPCP focuses on site and source controls to minimize the construction and long-term impacts of the project. Greater details of the BMPs specified for this project is provided in Section 3.

2.3.1 Site Controls

A set back from the creek flow line will be maintained. This area is identifiable by the Land Conservancy planting flags. The contractor shall only enter the Land Conservancy restoration area as necessary to install irrigation piping. All irrigation piping shall be laid on top of the soil (except for road crossing locations).

2.3.2 Source Controls (and pollutant inventory)

This WPCP requires the Contractor and Owner to adopt good housekeeping and waste management practices. An inventory of anticipated or potentially generated pollutants was taken and BMPs selected to ensure the control of those pollutants.

The following construction activities and materials have the potential to contribute pollutants to storm water runoff:

- **Site Disturbance:** Installation operations have the potential to result in fugitive dust, erosion and sedimentation. The installation process for fence post installation shall occur only during weather forecasts showing an extended period of dry weather. Mulch shall be placed a top planting holes prior to likely forecasted rain events (rain events with a 50% or greater probability of occurring). Vegetation shall be cleared and grubbed only within the planting and seeding plots and as noted on the plans.
- **Site Drainage:** Irrigation lines that cross the riparian areas shall be disconnected (via quick couplers) prior to likely forecasted rain events.
- **Road System:** The project utilizes existing stabilized roadway for ingress and exit from the site. When traveling on interior dirt roads or on the site vegetation in the planting area, speeds will be controlled to minimize dust generation.
- **Construction Equipment:** Construction equipment has the potential to introduce oil, grease, anti-freeze, transmission and hydraulic fluid, diesel fuel and gasoline, etc. into surface and ground water.

  The staging and fueling of construction equipment will occur on the designated area shown on the plans. Fueling shall occur over an impervious surface. Spill kits will be on site with personnel trained on how to use them. Vehicles will be checked and maintained daily to prevent leaks of materials.
- **Pesticides:** All pesticide work will adhere to licensed pesticide applicator recommendations.

- **Fence Installation:** Care will be taken to prevent discharge of the concrete used for pull, end and corner post on surrounding areas. All excess concrete shall be collected and disposed of properly.

  The staging and fueling of construction equipment will occur on the designated area shown on the plans. Fueling shall occur over an impervious surface. Spill kits will be on site with personnel trained on how to use them. Vehicles will be checked and maintained daily to prevent leaks of materials.

- **Concrete pad installation.** A temporary portable concrete washout will be required during the concrete pad installation work.

2.4 Contractor Information

The front cover includes the names and contact information for the prime contacts associated with stormwater compliance on the site.

2.5 Project Schedule

A schedule for the project is provided on the next page.

Section 3 Pollution Control Measures

3.1 Soil Stabilization (Erosion Control)

Erosion control consists of source control measures that are designed to prevent soil particles from detaching and becoming transported in storm water runoff. The most effective way to control erosion is to preserve existing vegetation where feasible, to limit disturbance, and to stabilize and re-vegetate disturbed areas as soon as possible after grading or construction.

The following soil stabilization BMP implementation table indicates BMPs that shall be implemented to control erosion on the construction site.

Table 3.1 TEMPORARY SOIL STABILIZATION BMPs

BMP ID NO	BMP NAME	BMP USED		IF NOT USED, STATE REASON
		YES	NO	
SS-1	Scheduling	☒	☐	
SS-2	Preservation of Property/ Preservation of Existing Vegetation	☒	☐	
SS-3	Hydraulic Mulch	☐	☒	Minimal earth disturbance associated with project.
SS-5	Soil Binders	☐	☒	” “
SS-4	Hydroseeding	☐	☒	” “
SS-5	Soil Binders	☐	☒	” “
SS-6	Straw Mulch	☐	☒	” “
SS-7	Geotextiles & Mats	☐	☒	” “
SS-8	Wood Mulching	☐	☒	” “
SS-9	Earth Dikes and Drainage Swales	☐	☒	” “
SS-10	Outlet Protection / Velocity Dissipation Devices	☐	☒	No concentrated flows created as part of this project.
SS-11	Slope Drains	☐	☒	No slopes created within work area.
SS-12	Streambank Stabilization	☐	☒	No streams impacted within work area.
SS-13	Stabilize channel crossings	☐	☒	No new crossing created within work area.

Vegetation shall be cleared and grubbed only within the planting and seeding plots and as noted on the plans.

SS-1. This project is scheduled to maximize success of acorn and native seed plantings. Fence work will not be schedule during rain events.

SS-2. Prior to moving on site the Contractor shall coordinate with the Land Conservancy to install ESA fencing or highly visible flagging around the habitat restoration areas installed by the Land Conservancy.

3.2 Sediment Control BMPs

Sediment controls are designed to intercept and settle out soil particles that have been detached and transported by the force of water.

Sediment controls are encouraged to be implemented with appropriate erosion control BMPs (runoff control and soils stabilization) for areas undergoing land surface disturbance.

The following sediment control BMP implementation table indicates the BMPs that shall be implemented to control sediment on the construction site.

Table 3.2 TEMPORARY SEDIMENT CONTROL BMPs

BMP ID NO	BMP NAME	BMP USED		IF NOT USED, STATE REASON
		YES	NO	
SE-1	Temporary Silt Fence	☐	☒	Minimal earth disturbance associated with project.
SE-2	Temporary Sediment Basin	☐	☒	” “
SE-4	Temporary Check Dam	☐	☒	” “
SE-5	Temporary Fiber Rolls	☐	☒	” “
SE-6	Temporary Gravel Bag Berm	☐	☒	” “
SE-7	Street Sweeping	☒	☐	
SE-8	Temporary Sandbags	☐	☒	Minimal earth disturbance associated with project.
SE-9	Temporary Straw Bale Barrier	☐	☒	” “
SE-10	Temporary Drain Inlet Protection	☐	☒	No DI’s on site to protect.

SE-7. The entrance area will be cleaned by sweeping to remove dirt, dust, mud and construction debris minimally at the end of each working day and more often if necessary. Sweeping will occur prior to rain events and any time that construction activity or related materials are deposited on the road and adjacent parking areas. A street sweeper will be brought to the site if tracking becomes an issue, otherwise push brooms will be utilized.

3.3 Tracking Control BMPs

The following tracking control BMP implementation table indicates the BMPs that shall be implemented to control sediment tracking from the construction site onto public roads.

Table 3.3 TEMPORARY TRACKING CONTROL BMPs

BMP ID NO	BMP NAME	BMP USED		IF NOT USED, STATE REASON
		YES	NO	
SE-7	Street Sweeping	☒	☐	
TC-1	Temporary Construction Entrance	☐	☒	Infrequent access to the site anticipated.
TC-2	Stabilized Construction Roadway	☐	☒	” “
TC-3	Temporary Entrance / Outlet Tire Wash	☐	☒	” “

The entrance area will be cleaned by sweeping to remove dirt, dust, mud and construction debris minimally at the end of each working day and more often if necessary. Sweeping will occur prior to rain events and any time that construction activity or related materials are deposited on the road. Should sweeping not be effective, the WPCP will be amended to include shaker plates in advance of the asphalt.

3.4 Wind Erosion Control BMPs

Wind control BMP are typically implemented to control airborne debris and dust from leaving the construction site onto private or public roads. No construction traffic will be traveling on unpaved roads; no mass grading of the site or blasting activities are planned.

Table 3.4 TEMPORARY WIND EROSION CONTROL BMPs

BMP ID NO	BMP NAME	BMP USED		IF NOT USED, STATE REASON
		YES	NO	
WE-1	Wind Erosion Control	☒	☐	

3.5 Construction Site Management

Construction site management shall consist of controlling potential sources of water pollution before they come in contact with storm water systems or watercourses. The Contractor shall control material pollution and manage waste and non-storm water existing at the construction site by implementing effective handling, storage, use, and disposal practices.

3.5.1 Non-Storm water Management BMPs

Non-storm water discharges consist of all discharges that do not originate from precipitation events (i.e., all discharges to a conveyance system other than storm water). Non-storm water discharges into storm drainage systems or waterways, which are not authorized under the Permit or authorized under a separate NPDES permit, are prohibited.

The following BMP implementation table indicates the BMPs that have been selected to control non-storm water pollution on the construction site.

Table 3.5.1 NON-STORM WATER MANAGEMENT BMPs

BMP ID NO	BMP NAME	BMP USED		IF NOT USED, STATE REASON
		YES	NO	
NS-1	Water Control and Conservation	☒	☐	
NS-2	Dewatering	☐	☒	No dewatering ops planned.
NS-3	Paving, Sealing, Saw cutting, and Grinding Operations	☐	☒	No paving, sawcutting ops planned.
NS-4	Temp Stream Crossing	☐	☒	No stream crossings.
NS-5	Clear Water Diversion	☐	☒	Not applicable, no perennial waterways on site
NS-6	Illegal Connection and Illegal Discharge Detection Reporting	☒	☐	
NS-7	Potable Water / Irrigation	☒	☐	
NS-8	Vehicle and Equipment Cleaning	☐	☒	No equipment or vehicle cleaning conducted on site.
NS-9	Vehicle and Equipment Fueling	☒	☐	
NS-10	Vehicle and Equipment Maintenance	☒	☐	
NS-11	Pile Driving Operations	☐	☒	No pile driving ops planned.
NS-12	Concrete Curing	☐	☐	Concrete cure not required.
NS-13	Concrete Finishing	☐	☒	Not anticipated
NS-14/15	Material and Equipment Used Over Water/Structure Demolition / Removal Over or Adjacent to Water	☐	☒	Not applicable.

NS-1. Water equipment and fittings will be inspected daily and repaired as necessary to prevent unintended discahrges.

NS-6. An initial inspection of the site has been conducted and no areas of contimination were identified. The crew will be advised to look for evidence of illicit connections, illegal ddumping or discharges.

NS-9. Regular maintenance of construction equipment shall be performed to reduce risk of leaks of petroleum products from the equipment onto the Site. All fueling will occur in designated areas only. Fueling will occur over impervious surfaces. Fuel areas will be bermed to prevent run-on and run-off. Fueling and maintenance equipment will be supplied with spill kits and operators who are trained to use them.

3.5.2 Waste Management and Materials Pollution Control BMPs

Materials pollution control (materials handling) consist of implementing procedural and structural BMPs for handling, storing and using construction materials to prevent the release of those materials into storm water discharges. The amount and type of construction

materials to be utilized at the site will be dependent upon the type of construction and the length of the construction period. The materials may be used continuously, such as fuel for vehicles and equipment, or the materials may be used for a discrete period, such as soil binders for temporary stabilization.

The following BMP implementation table indicates the BMPs that have been selected to control construction site wastes and materials.

Table 3.5.2 WASTE MANAGEMENT AND MATERIALS POLLUTION CONTROL BMPS

BMP ID NO	BMP NAME	BMP USED		IF NOT USED, STATE REASON
		YES	NO	
WM-1	Material Delivery and Storage	☒	☐	
WM-2	Material Use	☒	☐	
WM-3	Stockpile Management	☒	☐	
WM-4	Spill Prevention and Control	☒	☐	
WM-5	Solid Waste Management	☒	☐	
WM-6	Hazardous Waste Management	☒	☐	
WM-7	Contaminated Soil Management	☐	☒	Contaminated soils not anticipated within project limits.
WM-8	Concrete Waste Management	☒	☐	A lined box, or trash container, etc. shall be used to collect excess concrete and any concrete rinse water.
	Temporary Concrete Washout Facility	☒	☐	
	Temporary Concrete Washout (Portable)	☒	☐	
WM-9	Sanitary/Septic Waste Management	☒	☐	
WM-10	Liquid Waste Management	☐	☒	Not applicable.

WM-1 and WM-2. Materials that may be detrimental if released to the environment will be kept in enclosed containers or be stored in a containment area capable of handling the volume of material stored with freeboard. Materials on site will be limited to the immediate need. MSDS sheets will be made available to field personnel.

WM-3. On-site stockpiles will be limited due to the nature of the project. However, loose materials will be consolidated and protected from dislodging with wind and rain events.

WM-4. All fueling and maintenance equipment will be equipped with a spill kit and an operator who knows how to use it. Storage of fuels and hazardous materials will be on impervious surfaces.

WM-5. The site shall be policed for litter daily. All general trash, food-related trash items

(e.g., wrappers, cans, bottles, food scraps, cigarettes, etc.) and other human-generated debris scheduled to be removed weekly will be stored in containers equipped with lids.

Waste disposal containers holding materials not designed to be outdoors or exposed to environmental conditions shall be covered at the end of every business day and during rain events.

WM-6. The project will utilize petroleum products, solvents and generate septic wastes. These materials have the potential to be classified as hazardous wastes. Hazardous wastes than cannot be reused or recycled will be disposed of by a licensed hazardous waste hauler.

WM-8. Excess concrete and any concrete tool rinse water shall be prevented from discharging onto site soils.

WM-9. Port-a-potties will be brought to the site and WM-9 will be implemented to prevent discharges of pollutants to receiving waters. Licensed personnel shall provide regular maintenance and wastes will be disposed offsite.

Section 4 Construction Site Monitoring Program

A Construction Site Monitoring Program (CSMP) was developed to address the following objectives:

- To determine whether non-visible pollutants are present at the construction site and are causing or contributing to exceedances of water quality objectives;
- To determine whether immediate corrective actions, additional Best Management Practices (BMP) implementation, or WPCP revisions are necessary to reduce pollutants in stormwater discharges and authorized non-stormwater discharges;
- To determine whether BMPs included in the WPCP are effective in preventing or reducing pollutants in stormwater discharges and authorized non-stormwater discharges.

The Construction Site Monitoring Program forms are provided as **Attachment A.**

4.1 When crews are actively on site

When crews are actively on site, the following inspection protocols shall be adhered to:

Intermittent (oversight) inspections shall occur weekly.

Before likely rain inspections shall occur whenever a likely precipitation rain event is predicted within 48 hours.

During rain event inspections shall occur daily during rain extended rain events.

After rain event inspections shall occur within 48 hours after the conclusion of any rain event with a cumulative total of 0.5-inches.

4.2 When crews are not actively on site

When crews are not actively on site, the following inspection protocols shall be adhered to:

Intermittent (oversight) inspections shall occur monthly.

Before likely rain inspections shall occur whenever a likely precipitation rain event is predicted within 48 hours.

During rain event inspections shall occur daily during rain extended rain events.

After rain event inspections shall occur within 48 hours after the conclusion of any rain event with a cumulative total of 0.5-inches.

A likely precipitation event is any weather pattern that is forecast to have a 50% or greater probability of producing precipitation in the project area. The discharger shall ensure a printed copy of precipitation forecast information from the National Weather Service Forecast Office (e.g., by entering the zip code of the project's location at http://www.srh.noaa.gov/forecast).

Completed inspection forms shall be provided to the Resident Engineer within 3 days of the inspection. Corrective actions shall be addressed within 3 working days unless rain is forecasted, and then the corrective action must be implemented prior to the rain event.

4.3 Sampling

Sampling is only necessary if there is a breach or spill of a non-visible polluatant.

Non-visilbe pollants.

Non-visible pollutant monitoring is required only in the event of a BMP failure, breach, or spill. It is important to note that covered construction materials or those that are in their final constructed form, do not need to be monitored. Materials that are stored exposed to precipitation and may generate runoff need to be considered for non-visible pollutant monitoring.

Discharges shall collect one or more samples during any breach, malfunction, leakage, or spill observed during a visual inspection which could result in the discharge of pollutants to surface water that would not be visually detectable in storm water.

If there is a breach, spill or BMP failure, runoff potentially affected by the non-visible pollutants will be sampled within the first two hours of discharge. Samples collected must be large enough to characterize the site conditions.

In this case, sampling shall occur in proximity to the potential pollutant source, downstream from the identified failure, breach or spill. A reference sample will be obtained at any location within the temporary well work area upgradient from the failure, breach or spill. Samples will be collected from areas of concentrated flow, where possible.

Samples will be analyzed for all applicable non-visible pollutant parameters – indicating the presence of pollutants identified in the pollutant source assessment required.

All non-storm water sample analyses should be conducted by a state certified laboratory. The laboratory below was included on the State Approve laboratory list as of May 11, 2011 and is within 100 miles of the site:

Abalone Coast
4149 Sante Fe Road
San Luis Obispo CA 93401
(805) 595-1080

The following URL can be used to verify laboratory status:
http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx

To maintain sample integrity and prevent cross-contamination, sampling collection personnel shall:

- Wear a clean pair of sterile nitrile gloves prior to the collection and handling of each sample at each location.
- Not contaminate the inside of the sample bottle by allowing it to come into contact with any material other than the water sample.
- Decontaminate sampling equipment prior to sample collection using a TSP-soapy water wash, distilled water rinse, and final rinse with distilled water. Dispose of decontamination water/soaps appropriately (i.e., do not discharge to the storm drain system or receiving water).
- Discard sample bottles or sample lids that have been dropped onto the ground prior to sample collection.
- Avoid allowing rainwater to drip from rain gear or other surfaces into sample bottles.
- Not eat, smoke, or drink during sample collection, nor sneeze or cough in the direction of an open sample bottle.

- Minimize the exposure of the samples to direct sunlight, as sunlight may cause biochemical transformation of the sample to take place.

The sampler shall maintain a log of sampling events and test results. The log shall identify:

- Sampling date
- Separate times for sample collection of upstream, downstream, run-on, dewatering, and QA/QC samples recorded to the nearest minute
- Unique sample identification number and location
- Analysis constituent
- Names of sampling personnel
- Weather conditions (including precipitation amount)
- Test results
- Other pertinent data

All field and analytical data shall be kept in the WPCP document with copies provided to the RE within 3 days of receipt.

4.4 Non-Visible Pollutant Testing Guidance Table 1

Category	Construction Site Material	Visually Observable?	Pollutant Indicators 2	Suggested Analyses Field 3	Laboratory
Cleaning Products	Acids	No	**pH** Acidity Anions (acetic acid, phosphoric acid, sulfuric acid, nitric acid, hydrogen chloride)	pH Meter Acidity Test Kit	EPA 150.1 (pH)
					SM 2310B (Acidity)
					EPA 300.0 (Anion)
	Bleaches	No	Residual Chlorine	Chlorine	SM 4500-CL G (Res. Chlorine)
	Detergents	Yes - Foam	Visually Observable - No Testing Required		
	TSP	No	Phosphate	Phosphate	EPA 365.3 (Phosphate)
	Solvents	No	**VOC**	None	EPA 601/602 or EPA 624 (VOC)
			SVOC	None	EPA 625 (SVOC)
Portland Concrete Cement & Masonry Products	Portland Cement (PCC)	Yes - Milky Liquid	Visually Observable - No Testing Required		
	Masonry products	No	**pH**	pH Meter Alkalinity or Acidity Test Kit	EPA 150.1 (pH)
			Alkalinity		SM 2320 (Alkalinity)
	Mortar	Yes - Milky Liquid	Visually Observable - No Testing Required		
	Concrete Rinse Water	Yes - Milky Liquid	Visually Observable - No Testing Required		
	Non-Pigmented Curing Compounds	No	Acidity	pH Meter Alkalinity or Acidity Test Kit	SM 2310B (Acidity)
			Alkalinity		SM 2320 (Alkalinity)
			pH		EPA 150.1 (pH)
			VOC		EPA 601/602 or EPA 624 (VOC)
			SVOC		EPA 625 (SVOC)

Category	Construction Site Material	Visually Observable?	Pollutant Indicators 2	Suggested Analyses Field 3	Laboratory
Landscaping and Other Products	Aluminum Sulfate	No	Aluminum	TDS Meter Sulfate	EPA 200.8 (Metal)
			TDS		EPA 160.1 (TDS)
			Sulfate		EPA 300.0 (Sulfate)
	Sulfur-Elemental	No	Sulfate	Sulfate	EPA 300.0 (Sulfate)
	Fertilizers-Inorganic [4]	No	Nitrate	Nitrate	EPA 300.0 (Nitrate)
			Phosphate	Phosphate	EPA 365.3 (Phosphate)
			Organic Nitrogen	None	EPA 351.3 (TKN)
			Potassium	None	EPA 200.8 (Metal)
	Fertilizers-Organic	No	TOC	Nitrate	EPA 415.1 (TOC)
			Nitrate		EPA 300.0 (Nitrate)
			Organic Nitrogen		EPA 351.3 (TKN)
			COD		EPA 410.4 (COD)
	Natural Earth (Sand, Gravel, and Topsoil)	Yes - Cloudiness and turbidity	Visually Observable - No Testing Required		
	Herbicide	No	Herbicide	None	Check lab for specific herbicide or pesticide
	Pesticide		**Pesticide**		
	Lime		Alkalinity	pH Meter Alkalinity or Acidity Test Kit	SM 2320 (Alkalinity)
			pH		EPA 150.1 (pH)

Category	Construction Site Material	Visually Observable?	Pollutant Indicators 2	Suggested Analyses Field 3	Laboratory
Painting Products	Paint	Yes	Visually Observable - No Testing Required		
	Paint Strippers	No	VOC	None	EPA 601/602 or EPA 624 (VOC)
			SVOC	None	EPA 625 (SVOC)
	Resins	No	COD	None	EPA 410.4 (COD)
			SVOC		EPA 625 (SVOC)
	Sealants	No	COD	None	EPA 410.4 (COD)
	Solvents	No	COD	None	EPA 410.4 (COD)
			VOC		EPA 601/602 or EPA 624 (VOC)
			SVOC		EPA 625 (SVOC)
	Lacquers, Varnish, Enamels, and Turpentine	No	COD	None	EPA 410.4 (COD)
			VOC		EPA 601/602 or EPA 624 (VOC)
			SVOC		EPA 625 (SVOC)
	Thinners	No	VOC	None	EPA 601/602 or EPA 624 (VOC)
			COD		EPA 410.4 (COD)
Portable Toilet Waste Products	Portable Toilet Waste	Yes	Visually Observable - No Testing Required		
Contaminated Soil [5]	Aerially Deposited Lead[3]	No	Lead	None	EPA 200.8 (Metal)
	Petroleum	Yes – Rainbow Surface Sheen and Odor	Visually Observable - No Testing Required		
	Other	No	Contaminant Specific	Contaminant Specific	Contaminant Specific
Line Flushing Products	Chlorinated Water	No	Total chlorine	Chlorine	SM 4500-CL G (Res. Chlorine)

Category	Construction Site Material	Visually Observable?	Pollutant Indicators 2	Suggested Analyses Field 3	Laboratory
Adhesives	Adhesives	No	COD	None	EPA 410.4 (COD)
			Phenols	Phenol	EPA 420.1 (Phenol)
			SVOC	None	EPA 625 (SVOC)
Dust Palliative Products	Salts (Magnesium Chloride, Calcium Chloride, and Natural Brines)	No	Chloride	Chloride	EPA 300.0 (Chloride)
			TDS	TDS Meter	EPA 160.1 (TDS)
			Cations (Sodium, Magnesium, Calcium)	None	EPA 200.7 (Cations)
Vehicle	Antifreeze and Other Vehicle Fluids	Yes - Colored Liquid	Visually Observable - No Testing Required		
	Batteries	No	Sulfuric Acid	None	EPA 300.0 (Sulfate)
			Lead	None	EPA 200.8 (Metal)
			pH	pH Meter Alkalinity or Acidity Test Kit	EPA 150.1 (pH)
	Fuels, Oils, Lubricants	Yes - Rainbow Surface Sheen and Odor	Visually Observable - No Testing Required		

Soil Amendment/Stabilization Products	Polymer/Copolymer [6, 7]	No	Organic Nitrogen	None	EPA 351.3 (TKN)
			BOD	None	EPA 405.1 (BOD)
			COD	None	EPA 410.4 (COD)
			DOC	None	EPA 415.1 (DOC)
			Nitrate	Nitrate	EPA 300.0 (Nitrate)
			Sulfate	Sulfate	EPA 300.0 (Sulfate)
			Nickel	None	EPA 200.8 (Metal)
	Straw/Mulch	Yes - Solids	Visually Observable - No Testing Required		
	Lignin Sulfonate	No	Alkalinity	Alkalinity	SM 2320 (Alkalinity)
			TDS	TDS Meter	EPA 160.1 (TDS)
	Psyllium	No	COD	None	EPA 410.4 (COD)
			TOC		EPA 415.1 (TOC)
	Guar/Plant Gums	No	COD	None	EPA 410.4 (COD)
			TOC		EPA 415.1 (TOC)
			Nickel		EPA 200.8 (Metal)
	Gypsum	No	pH	pH Meter Alkalinity or Acidity Test Kit	EPA 150.1 (pH)
			Calcium	Calcium	EPA 200.7 (Calcium)
			Sulfate	Sulfate	EPA 300.0 (Sulfate)
			Aluminum	None	EPA 200.8 (Metal)
			Barium		
			Manganese		
			Vanadium		
Treated Wood Products	Ammoniacal-Copper-Zinc-Arsenate (ACZA) Copper-Chromium-Arsenic (CCA) Ammoniacal-Copper-Arsenate (ACA) Copper Naphthenate	No	Arsenic	Total Chromium	EPA 200.8 (Metal)
			Total Chromium		
			Copper		
			Zinc		
	Creosote	Yes - Rainbow Surface or Brown Suspension	Visually Observable - No Testing Required		

Section 5 Training Requirements

Key personnel have specific training or certifications to ensure their level of knowledge and skills are adequate to ensure their ability to design and evaluate project specifications that will comply with General Permit requirements. The discharger shall include documentation of all training for individuals responsible for:

1. All activities associated with compliance with the WPCP,
2. BMP installation, inspection, maintenance, and repair; and
3. Overseeing, revising, and amending the WPCP.

The WPCM shall minimally provide training at the onset of the project and then include stormwater topics as part of the tailgate safety meetings thereafter. Training frequency will be increased if inspection records or the site indicate that additional training is warranted. Training records shall be updated within 5 days of the training and provided to the RE monthly.

A training log is provided in **Attachment B** to document formal and informal training of various personnel throughout the life of the project.

Attachment A

Construction Site Monitoring Program

Inspection Checklist for Oak Woodland Habitat Mitigation for the Willow Road Extension and Hwy 101 Interchange Project

Inspection Type:	☐ Intermittent (Oversight)	☐ Before Likely Rain	☐ During Rain Event	☐ After Rain Event

Inspection date/time:	Inspector name:
Report date:	Signature

This inspection includes the following BMPs: / Operations

	EC-1: Scheduling		Relocate cattle trough
	EC-2: Preservation of existing Vegetation / property		Clearing and grubbing
	SE-7: Street Sweeping		Fence removal / fence installation
	WE-1: Wind Erosion Control		Planting
	NS-1: Water Control and Conservation		Plant Establishment Work
	NS-7: Potable Water / irrigation		Irrigation work
	NS-9 Vehicle and Equipment Fueling		Other (list):
	NS-10: Vehicle and Equipment Maintenance		
	WM-1: Material Delivery and Storage		
	WM-2: Material use		
	WM-4: Spill Prevention and Controls		
	WM-8: Concrete Waste Management		
	WM-9 Sanitary/Septic Waste Management		

	Other	DISCHARGE / OUTLETS LOCATIONS INSPECTED		NOTICEABLE ODORS OR VISIBLE SHEEN ON SURFACE?

WEATHER INFORMATION

	Raining at time of inspection ----------→	Time storm predicted (or began)	
	Recently rained, but dry at time of inspection -------→	Estimate duration / duration to date (hrs)	
	No rain	Rainfall of current storm event (in)	
	Rain prediction over next 3 days (percentage) -----→		Time elapse since last storm (days)

CORRECTIVE ACTION SUMMARY	RE-INSPECTION DATE	N/A
Re-inspection to verify that identified deficiencies have begun to be addressed within 72 hours and/or to verify the deficiency has been corrected.		

Date of inspection: _____

PRESERVATION OF EXISTING VEGETATION	YES	NO*	N/A
ESA fence placed and properly installed / maintained at locations identified on site map?			
Provide comments, recommended corrective action, implementation dates and reference to follow up inspections.			

EROSION CONTROLS	YES	NO*	N/A
Do inactive disturbed areas within the project boundary have effective erosion controls in place or have adequate provisions to ensure that material does not leave the site?			
Provide comments, recommended corrective action, implementation dates and reference to follow up inspections.			

SEDIMENT CONTROLS	YES	NO*	N/A
Do inactive disturbed areas within the project boundary have effective linear sediment controls in place per the requirements of the WPCP/SWPPP?			
Provide comments, recommended corrective action, implementation dates and reference to follow up inspections.			

STOCKPILE MANAGEMENT	YES	NO*	N/A
Are inactive stockpiles properly located, covered with perimeter controls in place?			
Are active stockpiles adequately protected if rain is predicted?			
Provide comments, recommended corrective action, implementation dates and reference to follow up inspections.			

TRACKING CONTROLS	YES	NO*	N/A
Is the pavement adjacent to project work areas free from visible sediment tracking?			
Provide comments, recommended corrective action, implementation dates and reference to follow up inspections.			

WIND EROSION CONTROLS	YES	NO*	N/A
Are wind erosion controls visually effective?			
Provide comments, recommended corrective action, implementation dates and reference to follow up inspections.			

VEHICLE & EQUIPMENT FUELING AND MAINTENANCE	YES	NO*	N/A
Is oil, grease and/or fuel prevented from leaking in to the ground, storm drain or surface water?			
Is all equipment fueled, maintained and stored over impervious areas with downgradient storm drains and receiving waters protected from spills/leaks, or if on pervious areas, is equipment fitted with appropriate BMPs?			
Provide comments, recommended corrective action, implementation dates and reference to follow up inspections.			

MATERIAL STORAGE	YES	NO*	N/A
Are material storage locations associated with the project located properly and reasonably clean and free of spills, leaks and other materials and protected from run on and runoff?			
Provide comments, recommended corrective action, implementation dates and reference to follow up inspections.			

RUN-ON AND RUN-OFF	YES	NO*	N/A
Is run-on, and runoff within the site, and all that discharges from the site, managed to minimize comingling with disturbed areas and to minimize the risk of localized flooding to public or private property?			
Runoff from the site free of visible sheen or noticeable odors?			
Provide comments, recommended corrective action, implementation dates and reference to follow up inspections.			

SAMPLING	YES	NO
Any reason to suspect that non-visible pollutant sampling is necessary? Use Change of Custody form. Identify location and suspect pollutant below:		
Provide comments, recommended corrective action, implementation dates and reference to follow up inspections.		

WASTE MANAGEMENT	YES	NO*	N/A
Are concrete washout facilities located within the project boundary water tight, properly located and if left on site during rain events, are washout facilities covered and protected from rain and run on?			
Are portable sanitary facilities located away from waterbody or water conveyance inlets? And in good condition?			
Are the contents of trash containers properly protected from contact with stormwater or from being dislodged by winds?			
Are waste disposal containers covered at the end of every business day and during rain events?			
Are liquid chemicals, hazardous materials, and hazardous wastes stored in secondary containment and free of leaks? Or in an entirely enclosed container?			
Are spill kits available, well stocked and appropriately placed?			
Provide comments, recommended corrective action, implementation dates and reference to follow up inspections.			

LANDSCAPE	YES	NO*	N/A
Are stockpiled materials such as mulches and topsoil contained when they are not actively being use?			
Are fertilizers and other landscape materials contained when they are not actively being used?			
Are pesticides being applied in accordance with written specifications by knowledgeable and experienced field personnel?			
Provide comments, recommended corrective action, implementation dates and reference to follow up inspections.			

GENERAL	YES	NO*	N/A
Are BMPs currently visibly functioning to prevent unauthorized discharges?			
Provide comments, recommended corrective action, implementation dates and reference to follow up inspections.			

RESIDENT ENGINEER REPORT ACCEPTANCE	YES	NO*	N/A
Signature & date			
Provide comments, recommended corrective action, implementation dates and reference to follow up inspections.			

Attachment B
Training Records

Storm Water Training Record Log

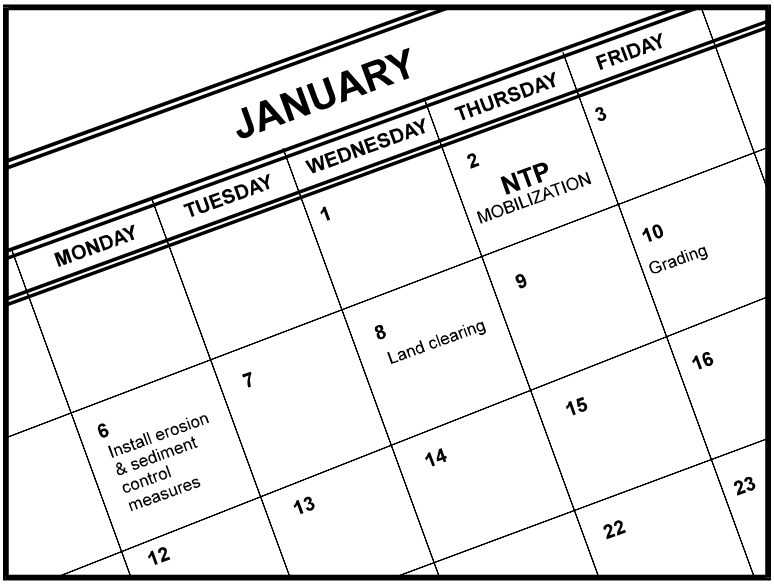
DATE HELD	OBJECTIVE	LENGTH OF TIME	INSTRUCTOR

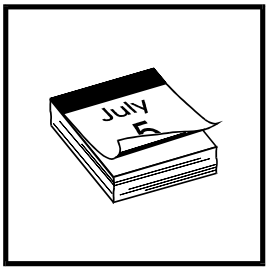
DRAFT

Attachment C
BMP Fact Sheets

Scheduling

SS-1





Standard Symbol

BMP Objectives

- Soil Stabilization
- Sediment Control
- Tracking Control
- Wind Erosion Control
- Non-Storm Water Management
- Materials and Waste Management

Definition and Purpose

This best management practice (BMP) involves developing, for every project, a schedule that includes sequencing of construction activities with the implementation of construction site BMPs such as temporary soil stabilization (erosion control) and temporary sediment controls measures. The purpose is to reduce the amount and duration of soil exposed to erosion by wind, rain, runoff and vehicle tracking, and to perform the construction activities and control practices in accordance with the planned schedule.

Appropriate Applications

Construction sequencing shall be scheduled to minimize land disturbance for all projects during the rainy and non-rainy season. Appropriate BMPs shall be implemented during both rainy and non-rainy seasons.

Limitations

None identified.

Standards and Specifications

- Developing a schedule and planning the project are the very first steps in an effective storm water program. The schedule shall clearly show how the rainy season relates to soil-disturbing and re-stabilization activities. The construction schedule shall be incorporated into the SWPPP or WPCP.
- The schedule shall include detail on the rainy season implementation and deployment of:
  - Temporary soil stabilization BMPs.
  - Temporary sediment control BMPs.
  - Tracking control BMPs.
  - Wind erosion control BMPs.

  - Non-storm water BMPs.
  - Waste management and materials pollution control BMPs.

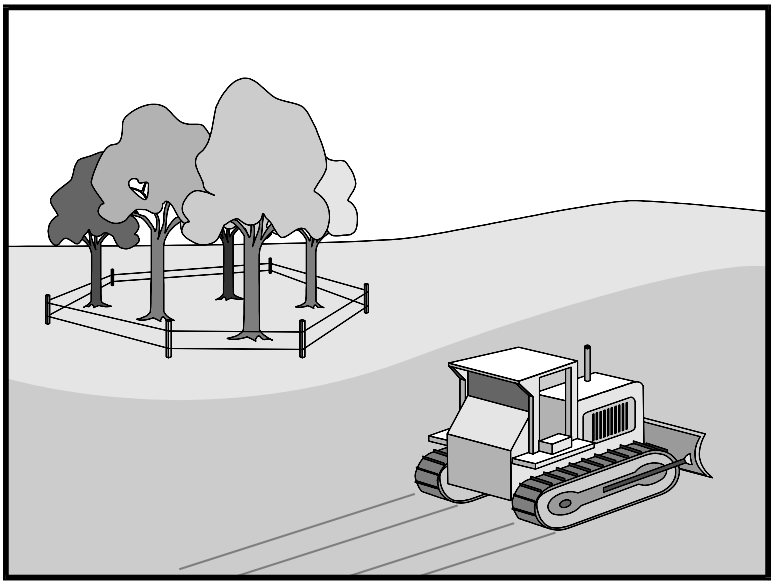
- Schedule shall also include dates for significant long-term operations or activities that may have planned non-storm water discharges such as dewatering, sawcutting, grinding, drilling, boring, crushing, blasting, painting, hydro-demolition, mortar mixing, bridge cleaning, etc.
- Schedule work to minimize soil disturbing activities during the rainy season.
- Develop the sequencing and timetable for the start and completion of each item such as site clearing and grubbing, grading, excavation, paving, pouring foundations, installing utilities, etc., to minimize the active construction area during the rainy season.
- Schedule major grading operations for the non-rainy season when practical.
- Stabilize non-active areas within 14 days from the cessation of soil-disturbing activities or one day prior to the onset of precipitation, whichever occurs first.
- Monitor the weather forecast for rainfall.
- When rainfall is predicted, adjust the construction schedule to allow the implementation of soil stabilization and sediment controls and sediment treatment controls on all disturbed areas prior to the onset of rain.
- Be prepared year-round to deploy soil stabilization and sediment control practices as required by Section 2 of this Manual. Erosion may be caused during dry seasons by unseasonal rainfall, wind, and vehicle tracking. Keep the site stabilized year-round, and retain and maintain rainy season sediment trapping devices in operational condition.
- Sequence trenching activities so that most open portions are closed before new trenching begins.
- Incorporate staged seeding and re-vegetation of graded slopes as work progresses.
- Consider scheduling when establishing permanent vegetation (appropriate planting time for specified vegetation).
- Apply permanent erosion control to areas deemed substantially complete during the project's defined seeding window.

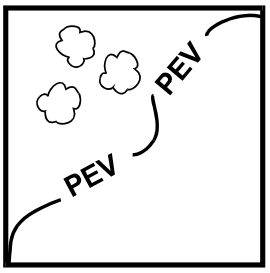
Maintenance and Inspection

- Verify that work is progressing in accordance with the schedule. If progress deviates, take corrective actions.
- Amend the schedule when changes are warranted or when directed by the Resident Engineer (RE).
- The Special Provisions require annual submittal of a rainy season implementation schedule. Amend the schedule prior to the rainy season to show updated information on the deployment and implementation of construction site BMPs.

Preservation of Existing Vegetation

SS-2





Standard Symbol

BMP Objectives

Soil Stabilization
● Sediment Control
○ Tracking Control
○ Wind Erosion Control
● Non-Storm Water Management
○ Materials and Waste Management
○

Definition and Purpose

Preservation of existing vegetation is the identification and protection of desirable vegetation that provides erosion and sediment control benefits.

Appropriate Applications

- Preserve existing vegetation at areas on a site where no construction activity is planned or will occur at a later date. Specifications for preservation of existing vegetation can be found in Standard Specifications, Section 7-1.11.
- On a year-round basis, temporary fencing shall be provided prior to the commencement of clearing and grubbing operations or other soil-disturbing activities in areas.
- Clearing and grubbing operations should be staged to preserve existing vegetation.

Limitations

Protection of existing vegetation requires planning, and may limit the area available for construction activities.

Standards and Specifications

Timing

- Preservation of existing vegetation shall be provided prior to the commencement of clearing and grubbing operations or other soil-disturbing activities in areas identified on the plans to be preserved, especially on areas designated as Environmentally Sensitive Areas (ESAs).
- Preservation of existing vegetation shall conform to scheduling requirements set forth in the special provisions.

Design and Layout

- Mark areas to be preserved with temporary fencing made of orange polypropylene that is stabilized against ultraviolet light. The temporary fencing shall be at least 1 meter (3.2. ft) tall and shall have openings not larger than 50 mm by 50 mm (2 in by 2 in).

- Fence posts shall be either wood or metal, at the Contractor's discretion, as appropriate for the intended purpose. The post spacing and depth shall be adequate to completely support the fence in an upright position.

- Minimize the disturbed areas by locating temporary roadways to avoid stands of trees and shrubs and to follow existing contours to reduce cutting and filling.

- Consider the impact of grade changes to existing vegetation and the root zone.

Installation

- Construction materials, equipment storage, and parking areas shall be located where they will not cause root compaction.

- Keep equipment away from trees to prevent trunk and root damage.

- Maintain existing irrigation systems.

- Employees and subcontractors shall be instructed to honor protective devices. No heavy equipment, vehicular traffic, or storage piles of any construction materials shall be permitted within the drip line of any tree to be retained. Removed trees shall not be felled, pushed, or pulled into any retained trees. Fires shall not be permitted within 30 m (100 ft) of the drip line of any retained trees. Any fires shall be of limited size, and shall be kept under continual surveillance. No toxic or construction materials (including paint, acid, nails, gypsum board, chemicals, fuels, and lubricants) shall be stored within 15 m (50 ft) of the drip line of any retained trees, nor disposed of in any way which would injure vegetation.

Trenching and Tunneling

- Trenching shall be as far away from tree trunks as possible, usually outside of the tree drip line or canopy. Curve trenches around trees to avoid large roots or root concentrations. If roots are encountered, consider tunneling under them. When trenching and/or tunneling near or under trees to be retained, tunnels shall be at least 450 mm (18 in) below the ground surface, and not below the tree center to minimize impact on the roots.

- Tree roots shall not be left exposed to air; they shall be covered with soil as soon as possible, protected, and kept moistened with wet burlap or peat moss until the tunnel and/or trench can be completed.

- The ends of damaged or cut roots shall be cut off smoothly.

- Trenches and tunnels shall be filled as soon as possible. Careful filling and tamping will eliminate air spaces in the soil which can damage roots.

- Remove any trees intended for retention if those trees are damaged seriously enough to affect their survival. If replacement is desired or required, the new tree shall be of similar species, and at least 50 mm (2 in) caliper, unless

otherwise required by the contract documents.

- After all other work is complete, fences and barriers shall be removed last. This is because protected trees may be destroyed by carelessness during the final cleanup and landscaping.

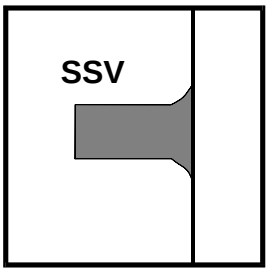
Maintenance and Inspection

During construction, the limits of disturbance shall remain clearly marked at all times. Irrigation or maintenance of existing vegetation shall conform to the requirements in the landscaping plan. If damage to protected trees still occurs, maintenance guidelines described below shall be followed:

- Serious tree injuries shall be attended to by an arborist.
- During construction, District Environmental shall be contacted to ensure that ESAs are protected.

Street Sweeping and Vacuuming

SC-7



Standard Symbol

BMP Objectives

- ● Soil Stabilization
- ● Sediment Control
- ● Tracking Control
- ○ Wind Erosion Control
- ○ Non-Storm Water Management
- ○ Materials and Waste Management

Definition and Purpose

Practices to remove tracked sediment to prevent the sediment from entering a storm drain or watercourse.

Appropriate Applications

These practices are implemented anywhere sediment is tracked from the project site onto public or private paved roads, typically at points of ingress/egress.

Limitations

Sweeping and vacuuming may not be effective when soil is wet or muddy.

Standards and Specifications

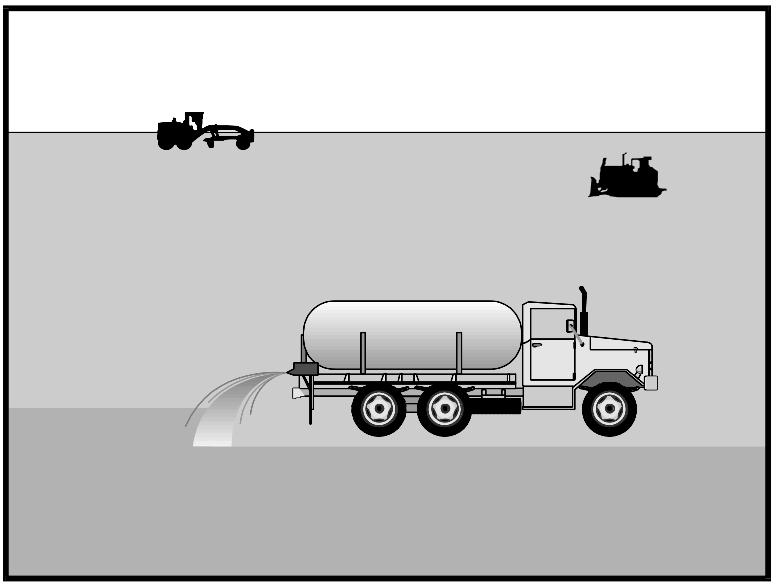
- ■ Kick brooms or sweeper attachments shall not be used.
- ■ Inspect potential sediment tracking locations daily.
- ■ Visible sediment tracking shall be swept and/or vacuumed daily.
- ■ If not mixed with debris or trash, consider incorporating the removed sediment back into the project.

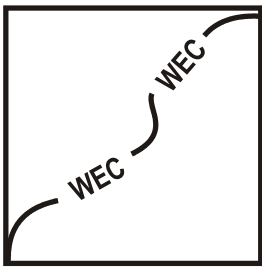
Maintenance and Inspection

- ■ Inspect ingress/egress access points daily and sweep tracked sediment as needed, or as required by the Resident Engineer (RE).
- ■ Be careful not to sweep up any unknown substance or any object that may be potentially hazardous.
- ■ Adjust brooms frequently; maximize efficiency of sweeping operations.
- ■ After sweeping is finished, properly dispose of sweeper wastes at an approved dumpsite in conformance with the provisions in Standard Specifications Section 7-1.13 .

Wind Erosion Control

WE-1





Standard Symbol

BMP Objectives

- ● Soil Stabilization
- ● Sediment Control
- ○ Tracking Control
- ● Wind Erosion Control
- ○ Non-Storm Water Management
- ○ Materials and Waste Management

Definition and Purpose

Wind erosion control consists of applying water and/or other dust palliatives as necessary to prevent or alleviate erosion by the forces of wind. Dust control shall be applied in accordance with Caltrans standard practices. Covering of small stockpiles or areas is an alternative to applying water or other dust palliatives.

Appropriate Applications

- This practice is implemented on all exposed soils subject to wind erosion.

Limitations

- Effectiveness depends on soil, temperature, humidity and wind velocity.

Standards and Specifications

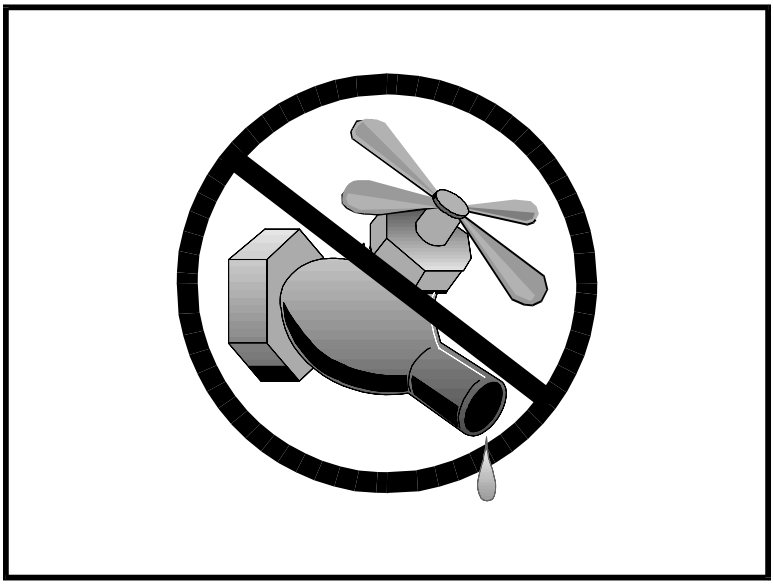
- Water shall be applied by means of pressure-type distributors or pipelines equipped with a spray system or hoses and nozzles that will ensure even distribution.
- All distribution equipment shall be equipped with a positive means of shutoff.
- Unless water is applied by means of pipelines, at least one mobile unit shall be available at all times to apply water or dust palliative to the project.
- If reclaimed water is used, the sources and discharge must meet California Department of Health Services water reclamation criteria and the Regional Water Quality Control Board requirements. Non-potable water shall not be conveyed in tanks or drain pipes that will be used to convey potable water and there shall be no connection between potable and non-potable supplies. Non-potable tanks, pipes and other conveyances shall be marked "NON-POTABLE WATER - DO NOT DRINK."
- Materials applied as temporary soil stabilizers and soil binders will also provide wind erosion control benefits.

Maintenance and Inspection

- Check areas that have been protected to ensure coverage.

Water Conservation Practices

NS-1



Standard Symbol

BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water Management
- ○ Materials and Waste Management

Definition and Purpose

Water conservation practices are activities that use water during the construction of a project in a manner that avoids causing erosion and/or the transport of pollutants off site.

Appropriate Applications

- Water conservation practices are implemented on all construction sites and wherever water is used.
- Applies to all construction projects.

Limitations

- None identified.

Standards and Specifications

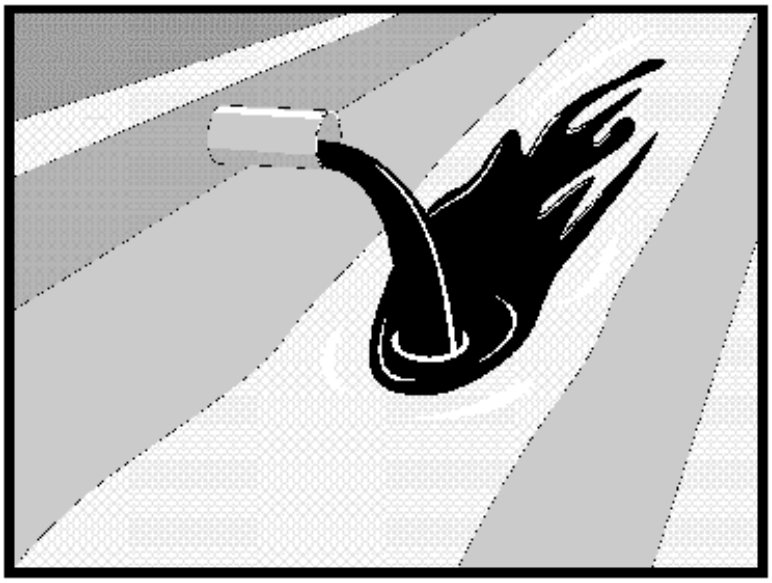
- Keep water equipment in good working condition.
- Stabilize water truck filling area.
- Repair water leaks promptly.
- Vehicles and equipment washing on the construction site is discouraged.
- Avoid using water to clean construction areas. Do not use water to clean pavement. Paved areas shall be swept and vacuumed.
- Direct construction water runoff to areas where it can infiltrate into the ground.
- Apply water for dust control in accordance with the Standard Specifications Section 10, and WE-1, “Wind Erosion Control.”
- Report discharges to RE immediately.

Maintenance and Inspection

- Inspect water equipment at least weekly.
- Repair water equipment as needed.

Illicit Connection/Illegal Discharge Detection and Reporting

NS-6



Standard Symbol

BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water Management
- ○ Materials and Waste Management

Definition and Purpose

Procedures and practices designed for construction contractors to recognize illicit connections or illegally dumped or discharged materials on a construction site and report incidents to the Resident Engineer (RE).

Appropriate Applications

- Illicit connection/illegal discharge detection and reporting is applicable anytime an illicit connection or discharge is discovered or illegally dumped material is found on the construction site.
- This best management practice (BMP) applies to all construction projects.

Limitations

- Unlabeled or non-identifiable material shall be assumed to be hazardous.
- Illicit connections and illegal discharges or dumping, for the purposes of this BMP, refer to discharges and dumping caused by parties other than the contractor.
- Procedures and practices presented in this BMP are general. Contractor shall use extreme caution, immediately notify the RE when illicit connections or illegal dumping or discharges are discovered, and take no further action unless directed by the RE.
- If pre-existing hazardous materials or wastes are known to exist onsite, the contractor's responsibility will be detailed in separate special provisions.

Illicit Connection/Illegal Discharge Detection and Reporting

NS-6

Standards and Specifications

Planning

- Inspect site before beginning the job for evidence of illicit connections or illegal dumping or discharges.
- Inspect site regularly during project execution for evidence of illicit connections or illegal dumping or discharges.
- Observe site perimeter for evidence or potential of illicitly discharged or illegally dumped material, which may enter the job site.

Identification of illicit connections and illegal dumping or discharges.

- Solids - Look for debris, or rubbish piles. Solid waste dumping often occurs on roadways with light traffic loads or in areas not easily visible from the traveled way.
- Liquids – signs of illegal liquid dumping or discharge can include:
  - Visible signs of staining or unusual colors to the pavement or surrounding adjacent soils.
  - Pungent odors coming from the drainage systems.
  - Discoloration or oily substances in the water or stains and residues detained within ditches, channels or drain boxes.
  - Abnormal water flow during the dry weather season.
- Urban Areas - Evidence of illicit connections or illegal discharges is typically detected at storm drain outfall locations or at manholes. Signs of an illicit connection or illegal discharge can include:
  - Abnormal water flow during the dry weather season.
  - Unusual flows in subdrain systems used for dewatering.
  - Pungent odors coming from the drainage systems.
  - Discoloration or oily substances in the water or stains and residues detained within ditches, channels or drain boxes.
  - Excessive sediment deposits, particularly adjacent to or near active off-site construction projects.

- Rural Areas - Illicit connections or illegal discharges involving irrigation drainage ditches are detected by visual inspections. Signs of an illicit discharge can include:
  - Abnormal water flow during the dry weather season.
  - Non-standard junction structures.
  - Broken concrete or other disturbances at or near junction structures.

Reporting

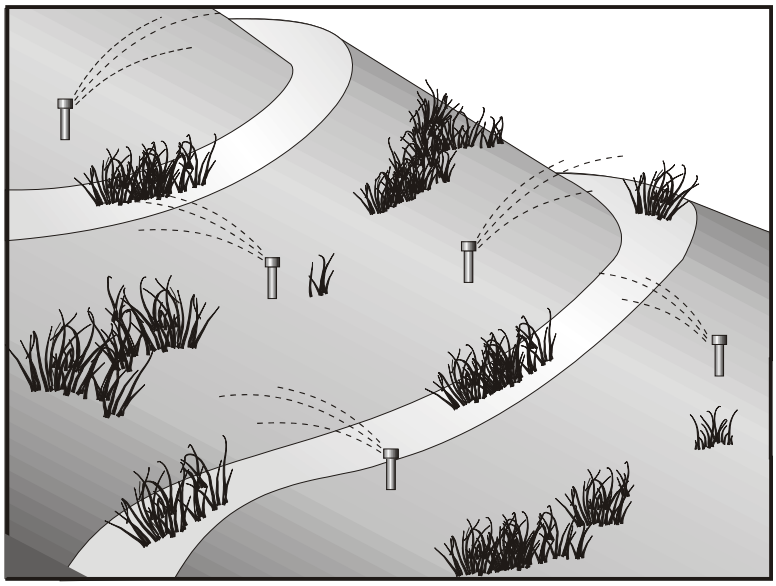
- Notify the RE of any illicit connections and illegal dumping or discharge incidents at the time of discovery. The RE will notify the District Construction Storm Water Coordinator and the Construction Hazmat Coordinator for reporting.

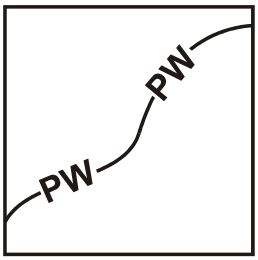
Cleanup and Removal

The contractor is not responsible for investigation and clean up of illicit or illegal dumping or discharges not generated by the contractor. Caltrans may direct contractor to clean up non-hazardous dumped or discharged material on the construction site.

Potable Water/Irrigation

NS-7





Standard Symbol

BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water Management
- ○ Materials and Waste Management

Definition and Purpose

Potable Water/Irrigation management consists of practices and procedures to manage the discharge of potential pollutants generated during discharges from irrigation water lines, landscape irrigation, lawn or garden watering, planned and unplanned discharges from potable water sources, water line flushing, and hydrant flushing.

Appropriate Applications

Implement this BMP whenever the above activities or discharges occur at or enter a construction site.

Limitations

- None identified.

Standards and Specifications

- Inspect irrigated areas within the construction limits for excess watering. Adjust watering times and schedules to ensure that the appropriate amount of water is being used and to minimize runoff. Consider factors such as soil structure, grade, time of year, and type of plant material in determining the proper amounts of water for a specific area.
- RE approval is required prior to commencing any washing activities that could discharge to the storm drain or receiving waterbody.
- Where possible, direct water from off-site sources around or through a construction site in a way that minimizes contact with the construction site.
- When possible, discharges from water line flushing shall be reused for landscaping purposes.
- Shut off the water source to broken lines, sprinklers, or valves as soon as possible to prevent excess water flow.

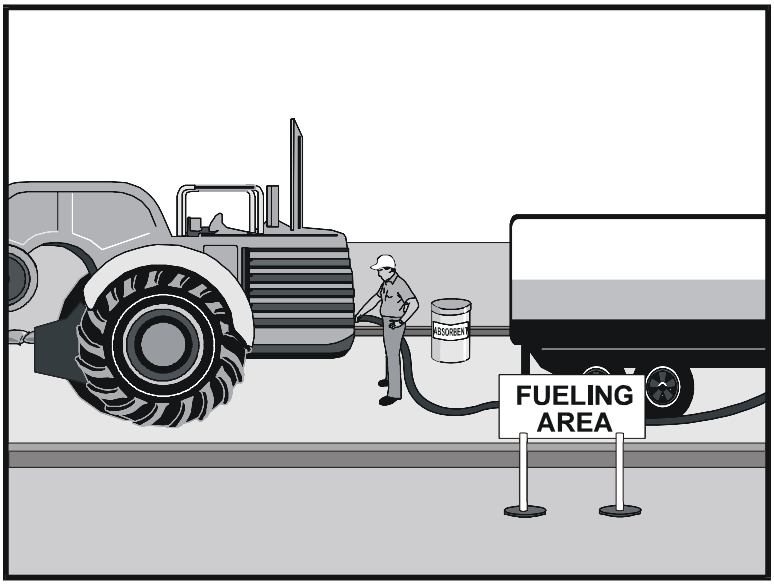
- Protect downstream storm water drainage systems and watercourses from water pumped or bailed from trenches excavated to repair water lines.

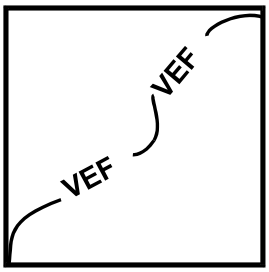
Maintenance and Inspection

- Repair broken water lines as soon as possible or as directed by the RE.
- Inspect irrigated areas regularly for signs of erosion and/or discharge.

Vehicle and Equipment Fueling

NS-9





Standard Symbol

BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water Management
- ○ Materials and Waste Management

Definition and Purpose

Vehicle and equipment fueling procedures and practices are designed to minimize or eliminate the discharge of fuel spills and leaks into storm drain systems or to watercourses.

Appropriate Applications

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

Limitations

- Onsite vehicle and equipment fueling shall only be used where it's impractical to send vehicles and equipment off-site for fueling.

Standards and Specifications

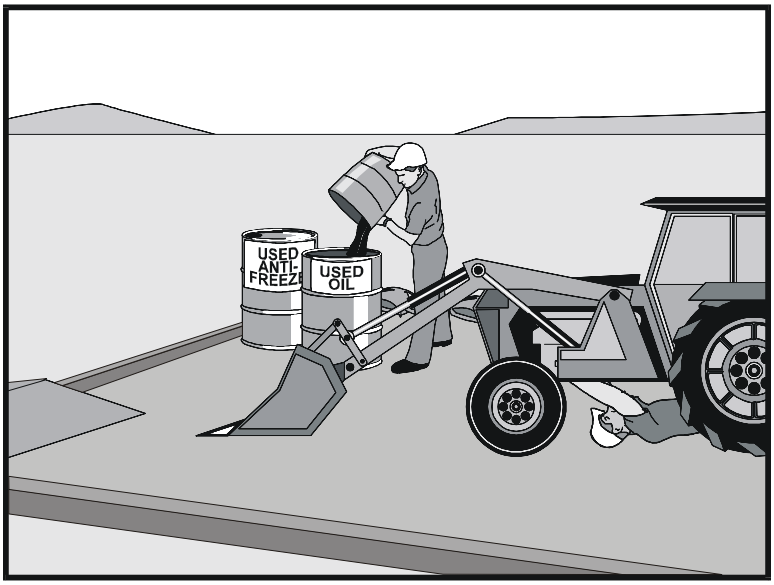
- When fueling must occur onsite, the contractor shall select and designate an area to be used, subject to approval of the Resident Engineer (RE).
- Absorbent spill clean-up materials and spill kits shall be available in fueling areas and on fueling trucks and shall be disposed of properly after use.
- Drip pans or absorbent pads shall be used during vehicle and equipment fueling, unless the fueling is performed over an impermeable surface in a dedicated fueling area.
- Dedicated fueling areas shall be protected from storm water run-on and runoff, and shall be located at least 15 m (50 ft) from downstream drainage facilities and watercourses. Fueling must be performed on level-grade areas.
- Nozzles used in vehicle and equipment fueling shall be equipped with an automatic shut-off to control drips. Fueling operations shall not be left unattended.
- Protect fueling areas with berms and/or dikes to prevent run-on, runoff, and to contain spills.

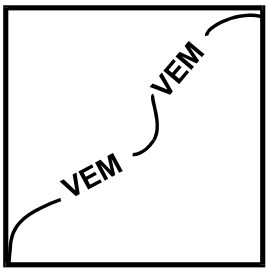
- Use vapor recovery nozzles to help control drips as well as air pollution where required by Air Quality Management Districts (AQMD). Ensure the nozzle is secured upright when not in use.
- Fuel tanks shall not be "topped-off."
- Vehicles and equipment shall be inspected on each day of use for leaks. Leaks shall be repaired immediately or problem vehicles or equipment shall be removed from the project site.
- Absorbent spill clean-up materials shall be available in fueling and maintenance areas and used on small spills instead of hosing down or burying techniques. The spent absorbent material shall be removed promptly and disposed of properly.
- Federal, state, and local requirements shall be observed for any stationary above ground storage tanks. Refer to WM-1, “Material Delivery and Storage.”
- Mobile fueling of construction equipment throughout the site shall be minimized. Whenever practical, equipment shall be transported to the designated fueling area.

Maintenance and Inspection

- Fueling areas and storage tanks shall be inspected regularly.
- Keep an ample supply of spill cleanup material on the site.
- Immediately cleanup spills and properly dispose of contaminated soil and cleanup materials.

Vehicle and Equipment Maintenance NS-10





Standard Symbol

BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water Management
- ○ Materials and Waste Management

Definition and Purpose

Procedures and practices to minimize or eliminate the discharge of pollutants to the storm drain systems or to watercourses from vehicle and equipment maintenance procedures.

Appropriate Applications

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

Limitations

- None identified.

Standards and Specifications

- Drip pans or absorbent pads shall 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.
- All maintenance areas are required to have spill kits and/or use other spill protection devices.
- Dedicated maintenance areas shall be protected from storm water run-on and runoff, and shall be located at least 15 m (50 ft) from downstream drainage facilities and watercourses.
- Drip Pans or plastic sheeting shall 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 one hour.
- Absorbent spill clean-up materials shall be available in maintenance areas and shall be disposed of properly after use. Substances used to coat asphalt transport trucks and asphalt-spreading equipment shall be non-toxic.
- Use off-site maintenance facilities whenever practical.

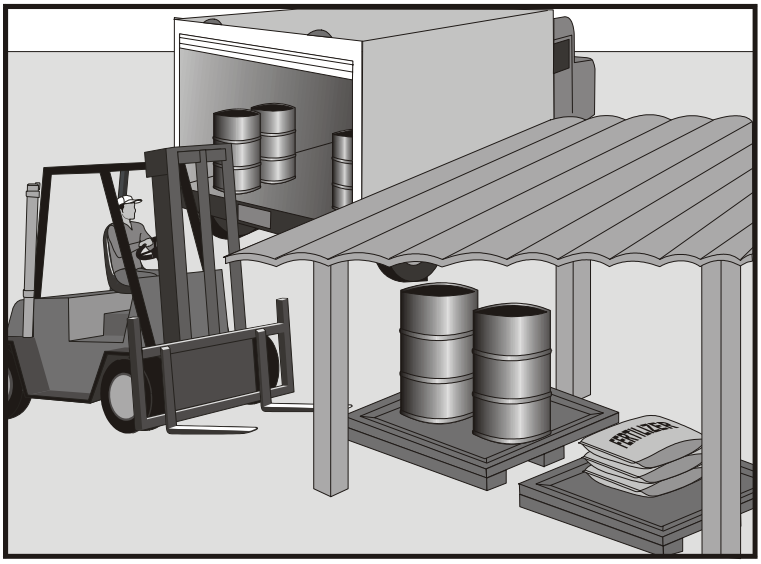
- For long-term projects, consider constructing roofs or using portable tents over maintenance areas.
- Properly dispose of used oils, fluids, lubricants, and spill cleanup materials.
- Do not dump fuels and lubricants onto the ground.
- Do not place used oil in a dumpster or pour into a storm drain or watercourse.
- Properly dispose or recycle used batteries.
- Do not bury used tires.
- Repair of fluid and oil leaks immediately.
- Provide spill containment dikes or secondary containment around stored oil and chemical drums.

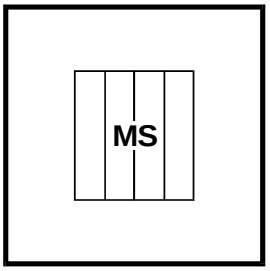
Maintenance and Inspection

- Maintain waste fluid containers in leak proof condition.
- Vehicle and equipment maintenance areas shall be inspected regularly.
- Vehicles and equipment shall be inspected on each day of use. Leaks shall be repaired immediately or the problem vehicle(s) or equipment shall be removed from the project site.
- Inspect equipment for damaged hoses and leaky gaskets routinely. Repair or replace as needed.

Material Delivery and Storage

WM-1





Standard Symbol

BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water Management
- ● Materials and Waste Management

Definition and Purpose

Procedures and practices for the proper handling and storage of materials in a manner that minimizes or eliminates the discharge of these materials to the storm drain system or to watercourses.

Appropriate Applications

These procedures are implemented at all construction sites with delivery and storage of the following:

- Hazardous chemicals such as:
  - Acids,
  - lime,
  - glues,
  - adhesives,
  - paints,
  - solvents, and
  - curing compounds.
- Soil stabilizers and binders.
- Fertilizers.
- Detergents.
- Plaster.
- Petroleum products such as fuel, oil, and grease.
- Asphalt and concrete components.
- Pesticides and herbicides.

- Other materials that may be detrimental if released to the environment.

Limitations

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

Standards and Specifications

General

- Train employees and subcontractors on the proper material delivery and storage practices.
- Temporary storage area shall be located away from vehicular traffic.
- Material Safety Data Sheets (MSDS) shall be supplied to the Resident Engineer (RE) for all materials stored.

Material Storage Areas and Practices

- Liquids, petroleum products, and substances listed in 40 CFR Parts 110, 117, or 302 shall be stored in approved containers and drums and shall be placed in temporary containment facilities for storage.
- Throughout the rainy season, each temporary containment facility shall have a permanent cover and side wind protection or be covered during non-working days and prior to and during rain events.
- A temporary containment facility shall provide for a spill containment volume able to contain precipitation from a 24-hour, 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 shall be impervious to the materials stored therein for a minimum contact time of 72 hours.
- A temporary containment facility shall be maintained free of accumulated rainwater and spills. In the event of spills or leaks, accumulated rainwater and spills shall be collected and placed into drums. These liquids shall be handled as a hazardous waste unless testing determines them to be non-hazardous. All collected liquids or non-hazardous liquids shall be sent to an approved disposal site.
- Sufficient separation shall be provided between stored containers to allow for spill cleanup and emergency response access.
- Incompatible materials, such as chlorine and ammonia, shall not be stored in the same temporary containment facility.
- Materials shall be stored in their original containers and the original product labels shall be maintained in place in a legible condition. Damaged or otherwise illegible labels shall be replaced immediately.

-
- Bagged and boxed materials shall be stored on pallets and shall not be allowed to accumulate on the ground. To provide protection from wind and rain, throughout the rainy season, bagged and boxed materials shall be covered during non-working days and prior to rain events.
- Stockpiles shall be protected in accordance with BMP WM-3, "Stockpile Management."
- Minimize the material inventory stored on-site (e.g., only a few days supply).
- Have proper storage instructions posted at all times in an open and conspicuous location.
- Do not store hazardous chemicals, drums, or bagged materials directly on the ground. Place these items on a pallet and when possible, under cover in secondary containment.
- Keep hazardous chemicals well labeled and in their original containers.
- Keep ample supply of appropriate spill clean up material near storage areas.
- Also see BMP 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 on-site.
- Employees trained in emergency spill clean-up procedures shall be present when dangerous materials or liquid chemicals are unloaded.

Spill Clean-up

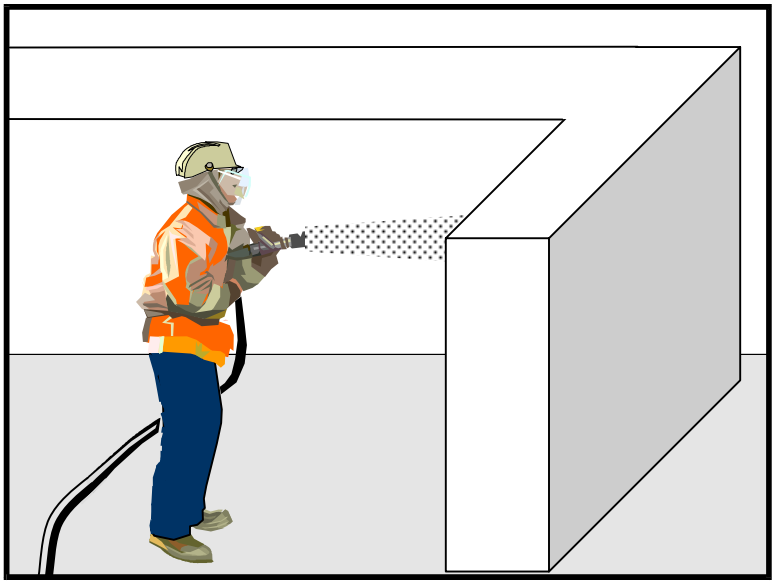
- Contain and clean up any spill immediately.
- If significant residual materials remain on the ground after construction is complete, properly remove and dispose any hazardous materials or contaminated soil.
- See BMP WM-4, "Spill Prevention and Control", for spills of chemicals and/or hazardous materials.

Maintenance and Inspection

- Storage areas shall be kept clean, well organized, and equipped with ample clean-up supplies as appropriate for the materials being stored.
- Perimeter controls, containment structures, covers, and liners shall be repaired or replaced as needed to maintain proper function.
- Inspect storage areas before and after rainfall events, and at least weekly during other times. Collect and place into drums any spills or accumulated rainwater.

Material Use

WM-2



MU

Standard Symbol

BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water Management
- ● Materials and Waste Management

Definition and Purpose

These are procedures and practices for use of construction material in a manner that minimizes or eliminates the discharge of these materials to the storm drain system or to watercourses.

Appropriate Applications

This BMP applies to all construction projects. These procedures apply when the following materials are used or prepared on site:

- Hazardous chemicals such as:

  Acids,
  lime,
  glues,
  adhesives,
  paints,
  solvents, and
  curing compounds.

- Soil stabilizers and binders.
- Fertilizers.
- Detergents.
- Plaster.
- Petroleum products such as fuel, oil, and grease.
- Asphalt and concrete components.
- Pesticides and herbicides.
- Other materials that may be detrimental if released to the environment.

Limitations

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

Standards and Specifications

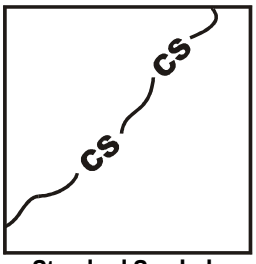
- Material Safety Data Sheets (MSDS) shall be supplied to the Resident Engineer (RE) for all materials.
- Latex paint and paint cans, used brushes, rags, absorbent materials, and drop cloths, when thoroughly dry and are no longer hazardous, may be disposed of with other construction debris.
- Do not 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 practical, and rinse to a drain leading to a sanitary sewer where permitted, or into a concrete washout pit. For oil-based paints, clean brushes to the extent practical 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 on-site when practical.
- Do not over-apply fertilizers and pesticides. Prepare only the amount needed. Strictly follow the recommended usage instructions. Apply surface dressings in smaller applications, as opposed to large applications, to allow time for it to work in and to avoid excess materials being carried off-site by runoff.
- Application of herbicides and pesticides shall be performed by a licensed applicator.
- Contractors are required 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.

Maintenance and Inspections

- Spot check employees and subcontractors monthly throughout the job to ensure appropriate practices are being employed.

Stockpile Management

WM-3



Standard Symbol

BMP Objectives

- ● Soil Stabilization
- ● Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ○ Non-Storm Water Management
- ● Materials and Waste Management

Definition and Purpose

Stockpile management procedures and practices are designed to reduce or eliminate air and storm water pollution from stockpiles of soil, and paving materials such as portland cement concrete (PCC) rubble, asphalt concrete (AC), asphalt concrete rubble, aggregate base, aggregate subbase or pre-mixed aggregate, asphalt binder (so called “cold mix” asphalt) and pressure treated wood.

Appropriate Applications

Implemented in all projects that stockpile soil and other materials.

Limitations

- None identified

Standards and Specifications

- Protection of stockpiles is a year-round requirement.
- Locate stockpiles a minimum of 15 m (50 ft)away from concentrated flows of storm water, drainage courses, and inlets.
- Implement wind erosion control practices as appropriate on all stockpiled material. For specific information see BMP WE-1, “Wind Erosion Control.”
- Stockpiles of contaminated soil shall be managed in accordance with BMP WM-7, “Contaminated Soil Management.”
- Bagged materials should be placed on pallets and under cover.

Protection of Non-Active Stockpiles

Non-active stockpiles of the identified materials shall be protected further as follows:

- ***Soil stockpiles:***

  - During the rainy seasons, soil stockpiles shall be covered or protected with soil stabilization measures and a temporary perimeter sediment barrier at all times.

  - During the non-rainy season, soil stockpiles shall be covered and protected with a temporary perimeter sediment barrier prior to the onset of precipitation.

- ***Stockpiles of portland cement concrete rubble, asphalt concrete, asphalt concrete rubble, aggregate base, or aggregate subbase:***

  - During the rainy season, the stockpiles shall be covered or protected with a temporary perimeter sediment barrier at all times.

  - During the non-rainy season, the stockpiles shall be covered or protected with a temporary perimeter sediment barrier prior to the onset of precipitation.

- ***Stockpiles of "cold mix":***

  - During the rainy season, cold mix stockpiles shall be placed on and covered with plastic or comparable material at all times.

  - During the non-rainy season, cold mix stockpiles shall be placed on and covered with plastic or comparable material prior to the onset of precipitation.

- ***Stockpiles/Storage of pressure treated wood with copper, chromium, and arsenic or ammonical, copper, zinc, and arsenate:***

  - During the rainy season, treated wood shall be covered with plastic or comparable material at all times.

  - During the non-rainy season, treated wood shall be covered with plastic or comparable material and shall be placed on pallets prior to the onset of precipitation.

Protection of Active Stockpiles

Active stockpiles of the identified materials shall be protected further as follows:

- All stockpiles shall be covered, stabilized, or protected with a temporary linear sediment barrier prior to the onset of precipitation.

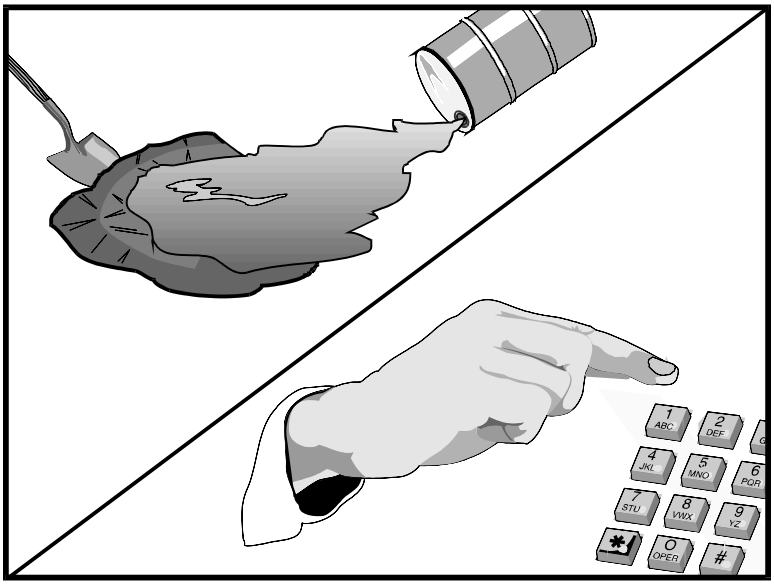
- Stockpiles of "cold mix" shall be placed on and covered with plastic or comparable material prior to the onset of precipitation.

Maintenance and Inspections

- Repair and/or replace perimeter controls and covers as needed, or as directed by the RE, to keep them functioning properly. Sediment shall be removed when sediment accumulation reaches one-third (1/3) of the barrier height.

Spill Prevention and Control

WM-4



Standard Symbol

BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water Management
- ● Materials and Waste Management

Definition and Purpose

These procedures and practices are implemented to prevent and control spills in a manner that minimizes or prevents the discharge of spilled material to the drainage system or watercourses.

Appropriate Application

This best management practice (BMP) applies to all construction projects. Spill control procedures are implemented anytime chemicals and/or hazardous substances are stored. Substances may include, but are not limited to:

- Soil stabilizers/binders.
- Dust Palliatives.
- Herbicides.
- Growth inhibitors.
- Fertilizers.
- Deicing/anti-icing chemicals.
- Fuels.
- Lubricants.
- Other petroleum distillates.

To the extent that the work can be accomplished safely, spills of oil, petroleum products, substances listed under 40 CFR parts 110, 117, and 302, and sanitary and septic wastes shall be contained and cleaned up immediately.

Limitations

- This BMP only applies to spills caused by the contractor.
- Procedures and practices presented in this BMP are general. Contractor shall identify appropriate practices for the specific materials used or stored on-site.

Standards and Specifications

- To the extent that it doesn't compromise clean up activities, spills shall be covered and protected from storm water run-on during rainfall.
- Spills shall not be buried or washed with water.
- Used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose shall be stored and disposed of in conformance with the special provisions.
- Water used for cleaning and decontamination shall not be allowed to enter storm drains or watercourses and shall be collected and disposed of in accordance with BMP WM-10, "Liquid Waste Management."
- Water overflow or minor water spillage shall be contained and shall not be allowed to discharge into drainage facilities or watercourses.
- Proper storage, clean-up and spill reporting instruction for hazardous materials stored or used on the project site shall be posted at all times in an open, conspicuous and accessible location.
- Waste storage areas shall be kept clean, well organized and equipped with ample clean-up supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers and liners shall be repaired or replaced as needed to maintain proper function.

Education

- Educate employees and subcontractors on what a "significant spill" is for each material they use, and what is the appropriate response for "significant" and "insignificant" spills.
- Educate employees and subcontractors on potential dangers to humans and the environment from spills and leaks.
- Hold regular meetings to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings).
- Establish a continuing education program to indoctrinate new employees.
- The Contractor's Water Pollution Control Manager (WPCM) shall oversee and enforce proper spill prevention and control measures.

Cleanup and Storage Procedures

- Minor Spills
  - Minor spills typically involve small quantities of oil, gasoline, paint, etc., which can be controlled by the first responder at the discovery of the spill.
  - Use absorbent materials on small spills rather than hosing down or burying the spill.
  - Remove the absorbent materials promptly and dispose of properly.
  - The practice commonly followed for a minor spill is:
    - Contain the spread of the spill.
    - Recover spilled materials.
    - Clean the contaminated area and/or properly dispose of contaminated materials.
- Semi-Significant Spills
  - Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities.
  - Clean up spills immediately:
    - Notify the project foreman immediately. The foreman shall notify the Resident Engineer (RE).
    - Contain spread of the spill.
    - If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.
    - If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.
    - If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

- Significant/Hazardous Spills
  - For significant or hazardous spills that cannot be controlled by personnel in the immediate vicinity, the following steps shall be taken:
    - Notify the RE immediately and follow up with a written report.
    - Notify the local emergency response by dialing 911. In addition to 911, the contractor will notify the proper county officials. It is the contractor's responsibility to have all emergency phone numbers at the construction site.
    - Notify the Governor's Office of Emergency Services Warning Center, (805) 852-7550.
    - For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110,119, and 302, the contractor shall notify the National Response Center at (800) 424-8802.
    - Notification shall first be made by telephone and followed up with a written report.
    - The services of a spills contractor or a Haz-Mat team shall be obtained immediately. Construction personnel shall not attempt to clean up the spill until the appropriate and qualified staff have arrived at the job site.
    - Other agencies which may need to be consulted include, but are not limited to, the Fire Department, the Public Works Department, the Coast Guard, the Highway Patrol, the City/County Police Department, Department of Toxic Substances, California Division of Oil and Gas, Cal/OSHA, RWQCB, etc.

Maintenance and Inspection

- Verify weekly that spill control clean up materials are located near material storage, unloading, and use areas.
- Update spill prevention and control plans and stock appropriate clean-up materials whenever changes occur in the types of chemicals used or stored onsite.

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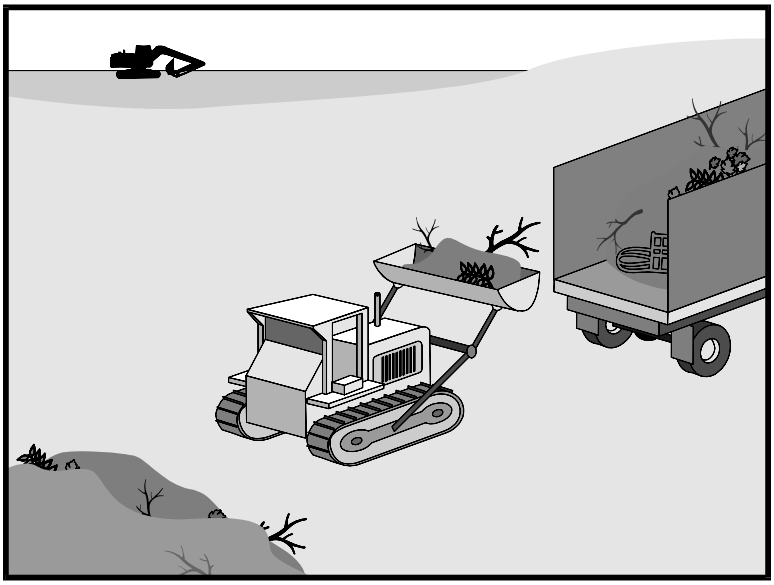
Solid Waste Management

WM-5



SWM

Standard Symbol

BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water Management
- ● Materials and Waste Management

Definition and Purpose

Solid waste management procedures and practices are designed to minimize or eliminate the discharge of pollutants to the drainage system or to watercourses as a result of the creation, stockpiling, or removal of construction site wastes.

Appropriate Applications

Solid waste management procedures and practices are implemented on all construction projects that generate solid wastes.

Solid wastes include but are not limited to:

- Construction wastes including brick, mortar, timber, steel and metal scraps, sawdust, pipe and electrical cuttings, non-hazardous equipment parts, styrofoam and other materials used to transport and package construction materials.
- Highway planting wastes, including vegetative material, plant containers, and packaging materials.
- Litter, including food containers, beverage cans, coffee cups, paper bags, plastic wrappers, and smoking materials, including litter generated by the public.

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.

Standards and Specifications

Education

- The Contractor's Water Pollution Control Manager (WPCM) shall oversee and enforce proper solid waste 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.
- Wherever possible, minimize production of solid waste materials.

Collection, Storage, and Disposal

- Dumpsters of sufficient size and number shall be provided to contain the solid waste generated by the project and properly serviced.
- Littering on the project site shall be prohibited.
- To prevent clogging of the storm drainage system litter and debris removal from drainage grates, trash racks, and ditch lines shall be a priority.
- Trash receptacles shall be provided in the Contractor's yard, field trailer areas, and at locations where workers congregate for lunch and break periods.
- Construction debris and litter from work areas within the construction limits of the project site shall 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 shall not be placed in or next to drain inlets, storm water drainage systems or watercourses.
- Full dumpsters shall be removed from the project site and the contents shall be disposed of outside the highway right-of-way in conformance with the provisions in the Standard Specifications Section 7-1.13.
- Litter stored in collection areas and containers shall be handled and disposed of by trash hauling contractors.
- Construction debris and waste shall be removed from the site every two weeks or as directed by the RE.

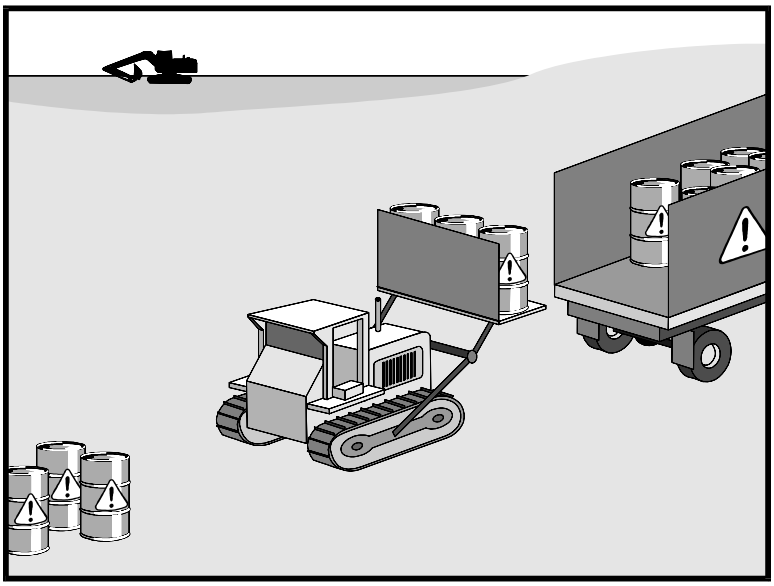
- Construction material visible to the public shall be stored or stacked in an orderly manner to the satisfaction of the RE.
- Storm water run-on shall be prevented from contacting stored solid waste through the use of berms, dikes, or other temporary diversion structures or through the use of measures to elevate waste from site surfaces.
- Solid waste storage areas shall be located at least 15 m (50 ft) from drainage facilities and watercourses and shall not be located in areas prone to flooding or ponding.
- Except during fair weather, construction and highway planting waste not stored in watertight dumpsters shall be securely covered from wind and rain by covering the waste with tarps or plastic sheeting or protected in conformance with the applicable Disturbed Soil Area protection section.
- Dumpster washout on the project site is not allowed.
- Notify trash hauling contractors that only watertight dumpsters are acceptable for use on-site.
- Plan for additional containers during the demolition phase of construction.
- Plan for more frequent pickup during the demolition phase of construction.
- Construction waste shall be stored in a designated area approved by the RE.
- Segregate potentially hazardous waste from non-hazardous construction site waste.
- Keep the site clean of litter debris.
- Make sure that toxic liquid wastes (e.g., used oils, solvents, and paints) and chemicals (e.g., acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.
- Dispose of non-hazardous waste in accordance with Standard Specification 7-1.13, Disposal of Material Outside the Highway Right of Way.
- For disposal of hazardous waste, see BMP 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/or surplus building materials when practical. For example, trees and shrubs from land clearing can be converted into wood chips, then used as mulch on graded areas. Wood pallets, cardboard boxes, and construction scraps can also be recycled.

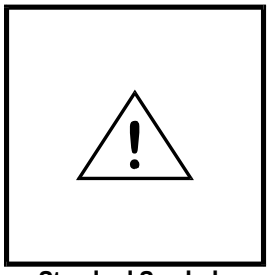
Maintenance and Inspection

- The WPCM shall monitor onsite solid waste storage and disposal procedures.
- Police site for litter and debris.

Hazardous Waste Management

WM-6





Standard Symbol

BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water Management
- ● Materials and Waste Management

Definition and Purpose

These are procedures and practices to minimize or eliminate the discharge of pollutants from construction site hazardous waste to the storm drain systems or to watercourses.

Appropriate Applications

- This best management practice (BMP) applies to all construction projects.
- Hazardous waste management practices are implemented on construction projects that generate waste from the use of:
  - Petroleum Products,
  - Asphalt Products,
  - Concrete Curing Compounds,
  - Pesticides,
  - Acids,
  - Paints,
  - Stains,
  - Solvents,
  - Wood Preservatives,
  - Roofing Tar, or
  - Any materials deemed a hazardous waste in California, Title 22 Division 4.5, or listed in 40 CFR Parts 110, 117, 261, or 302.

Limitations

- Nothing in this BMP relieves the Contractor from responsibility for compliance with federal, state, and local laws regarding storage, handling, transportation, and disposal of hazardous wastes.
- This BMP does not cover aerially deposited lead (ADL) soils. For ADL soils refer to BMP WM-7, "Contaminated Soil Management," and the project special provisions.

Standards and Specifications

Education

- Educate employees and subcontractors on hazardous waste storage and disposal procedures.
- Educate employees and subcontractors on potential dangers to humans and the environment from hazardous wastes.
- Instruct employees and subcontractors on safety procedures for common construction site hazardous wastes.
- Instruct employees and subcontractors in identification of hazardous and solid waste.
- Hold regular meetings to discuss and reinforce hazardous waste management procedures (incorporate into regular safety meetings).
- The Contractor's Water Pollution Control Manager (WPCM) shall oversee and enforce proper hazardous waste management procedures and practices.
- Make sure that hazardous waste is collected, removed, and disposed of only at authorized disposal areas.

Storage Procedures

- Wastes shall be stored in sealed containers constructed of a suitable material and shall be labeled as required by Title 22 CCR, Division 4.5 and 49 CFR Parts 172,173, 178, and 179.
- All hazardous waste shall be stored, transported, and disposed as required in Title 22 CCR, Division 4.5 and 49 CFR 261-263.
- Waste containers shall be stored in temporary containment facilities that shall comply with the following requirements:
  - Temporary containment facility shall provide for a spill containment volume able to contain precipitation from a 24-hour, 25 year storm event, plus the greater of 10% of the aggregate volume of all containers or 100% of the capacity of the largest tank within its boundary, whichever is greater.

  - Temporary containment facility shall be impervious to the materials stored there for a minimum contact time of 72 hours.

  - Temporary containment facilities shall be maintained free of accumulated rainwater and spills. In the event of spills or leaks accumulated rainwater and spills shall be placed into drums after each rainfall. These liquids shall be handled as a hazardous waste unless testing determines them to be non-hazardous. Non-hazardous liquids shall be sent to an approved disposal site.

  - Sufficient separation shall be provided between stored containers to allow for spill cleanup and emergency response access.

  - Incompatible materials, such as chlorine and ammonia, shall not be stored in the same temporary containment facility.

  - Throughout the rainy season, temporary containment facilities shall be covered during non-working days, and prior to rain events. Covered facilities may include use of plastic tarps for small facilities or constructed roofs with overhangs. A storage facility having a solid cover and sides is preferred to a temporary tarp. Storage facilities shall be equipped with adequate ventilation.

- Drums shall not be overfilled and wastes shall not be mixed.

- Unless watertight, containers of dry waste shall be stored on pallets.

- Paint brushes and equipment for water and oil based paints shall be cleaned within a contained area and shall not be allowed to contaminate site soils, watercourses or drainage systems. Waste paints, thinners, solvents, residues, and sludges that cannot be recycled or reused shall be disposed of as hazardous waste. When thoroughly dry, latex paint and paint cans, used brushes, rags, absorbent materials, and drop cloths shall be disposed of as solid waste.

- Ensure that adequate hazardous waste storage volume is available.

- Ensure that hazardous waste collection containers are conveniently located.

- Designate hazardous waste storage areas on site away from storm drains or watercourses and away from moving vehicles and equipment to prevent accidental spills.

- Minimize production or generation of hazardous materials and hazardous waste on the job site.

- Use containment berms in fueling and maintenance areas and where the potential for spills is high.

- Segregate potentially hazardous waste from non-hazardous construction site debris.
- Keep liquid or semi-liquid hazardous waste in appropriate containers (closed drums or similar) and under cover.
- Clearly label all hazardous waste containers with the waste being stored and the date of accumulation.
- Place hazardous waste containers in secondary containment.
- Do not allow potentially hazardous waste materials to accumulate on the ground.
- Do not mix wastes.

Disposal Procedures

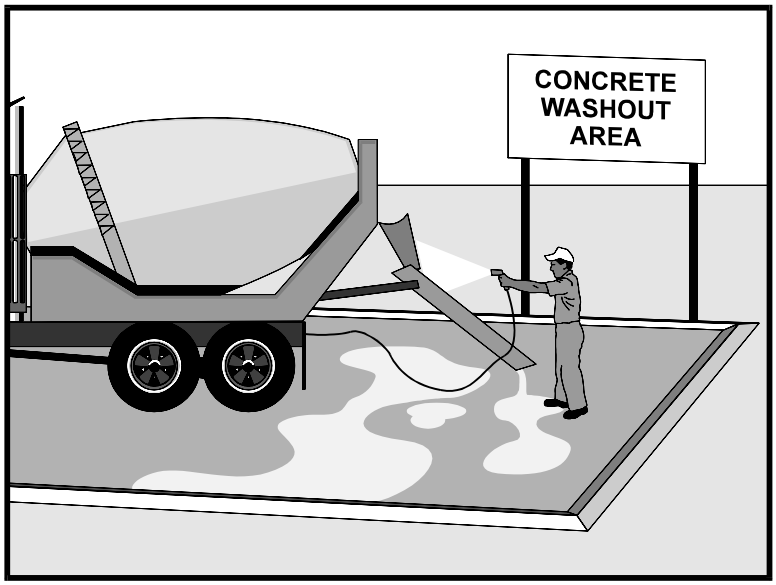
- Waste shall be disposed of outside the highway right-of-way within 90 days of being generated, or as directed by the Resident Engineer (RE). In no case shall hazardous waste storage exceed requirements in Title 22 CCR, Section 66262.34.
- Waste shall be disposed of by a licensed hazardous waste transporter at an authorized and licensed disposal facility or recycling facility utilizing properly completed Uniform Hazardous Waste Manifest forms.
- A Department of Health Services (DHS) certified laboratory shall sample waste and classify it to determine the appropriate disposal facility.
- Make sure that toxic liquid wastes (e.g., used oils, solvents, and paints) and chemicals (e.g., acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for solid waste construction debris.
- Properly dispose of rainwater in secondary containment that may have mixed with hazardous waste.
- Recycle any useful material such as used oil or water-based paint when practical.
- Attention is directed to "Hazardous Material", "Contaminated Material", and "Aerially Deposited Lead" of the contract documents regarding the handling and disposal of hazardous materials.

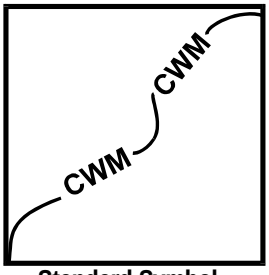
Maintenance and Inspection

- A foreman and/or construction supervisor shall monitor on-site hazardous waste storage and disposal procedures.
- Waste storage areas shall be kept clean, well organized, and equipped with ample clean-up supplies as appropriate for the materials being stored.
- Storage areas shall be inspected in conformance with the provisions in the contract documents.
- Perimeter controls, containment structures, covers, and liners shall be repaired or replaced as needed to maintain proper function.
- Hazardous spills shall be cleaned up and reported in conformance with the applicable Material Safety Data Sheet (MSDS) and the instructions posted at the project site.
- The National Response Center, at (800) 424-8802, shall be notified of spills of Federal reportable quantities in conformance with the requirements in 40 CFR parts 110, 117, and 302.
- Copy of the hazardous waste manifests shall be provided to the RE.

Concrete Waste Management

WM-8





Standard Symbol

BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water Management
- ● Materials and Waste Management

Definition and Purpose

These are procedures and practices that are designed to minimize or eliminate the discharge of concrete waste materials to the storm drain systems or watercourses.

Appropriate Applications

- Concrete waste management procedures and practices are implemented on construction projects where concrete is used as a construction material or where concrete dust and debris result from demolition activities.
- Where slurries containing portland cement concrete (PCC) or asphalt concrete (AC) are generated, such as from sawcutting, coring, grinding, grooving, and hydro-concrete demolition.
- Where concrete trucks and other concrete-coated equipment are washed on site, when approved by the Resident Engineer (RE). See also NS-8, “Vehicle and Equipment Cleaning."
- Where mortar-mixing stations exist.

Limitations

- None identified.

Standards and Specifications

Education

- Educate employees, subcontractors, and suppliers on the concrete waste management techniques described herein.
- The Contractor’s Water Pollution Control Manager (WPCM) shall oversee and enforce concrete waste management procedures.

Concrete Demolition Wastes

- Stockpile concrete demolition wastes in accordance with BMP WM-3, “Stockpile Management.”
- Disposal of hardened PCC and AC waste shall be in conformance with

Standard Specifications Section 7-1.13 or 15-3.02.

Concrete Slurry Waste Management and Disposal

- PCC and AC waste shall not be allowed to enter storm drainage systems or watercourses.
- A sign shall be installed adjacent to each temporary concrete washout facility to inform concrete equipment operators to utilize the proper facilities as shown on Page 7.
- A foreman and/or construction supervisor shall monitor onsite concrete working tasks, such as saw cutting, coring, grinding and grooving to ensure proper methods are implemented.
- Residue from saw cutting, coring and grinding operations shall be picked up by means of a vacuum device. Residue shall not be allowed to flow across the pavement and shall not be left on the surface of the pavement. See also BMP NS-3, "Paving and Grinding Operations."
- Vacuumed slurry residue shall be disposed in accordance with BMP WM-5, "Solid Waste Management" and Standard Specifications Section 7-1.13. Slurry residue shall be temporarily stored in a facility as described in "Onsite Temporary Concrete Washout Facility, Concrete Transit Truck Washout Procedures" below), or within an impermeable containment vessel or bin approved by the Engineer.
- Collect and dispose of all residues from grooving and grinding operations in accordance with Standard Specifications Section 7-1.13, 42-1.02 and 42-2.02.

Onsite Temporary Concrete Washout Facility, Concrete Transit Truck Washout Procedures

- Temporary concrete washout facilities shall be located a minimum of 15 m (50 ft) from storm drain inlets, open drainage facilities, and watercourses, unless determined infeasible by the RE. Each facility shall be located away from construction traffic or access areas to prevent disturbance or tracking.
- A sign shall be installed adjacent to each washout facility to inform concrete equipment operators to utilize the proper facilities. The sign shall be installed as shown on the plans and in conformance with the provisions in Standard Specifications Section 56-2, Roadside Signs.
- Temporary concrete washout facilities shall be constructed above grade or below grade at the option of the Contractor. Temporary concrete washout facilities shall be constructed and maintained in sufficient quantity and size to contain all liquid and concrete waste generated by washout operations.
- Temporary washout facilities shall have a temporary pit or bermed areas of sufficient volume to completely contain all liquid and waste concrete

materials generated during washout procedures.

- Perform washout of concrete mixers, delivery trucks, and other delivery systems in designated areas only.
- Wash concrete only from mixer chutes into approved concrete washout facility. Washout may be collected in an impermeable bag or other impermeable containment devices for disposal.
- Pump excess concrete in concrete pump bin back into concrete mixer truck.
- Concrete washout from concrete pumper bins can be washed into concrete pumper trucks and discharged into designated washout area or properly disposed offsite.
- Once concrete wastes are washed into the designated area and allowed to harden, the concrete shall be broken up, removed, and disposed of in conformance with the provisions in Standard Specifications Section 7-1.13 or 15-3.02.

Temporary Concrete Washout Facility Type "Above Grade"

- Temporary concrete washout facility Type "Above Grade" shall be constructed as shown on Page 6 or 7, with a recommended minimum length and minimum width of 3 m (10 ft), but with sufficient quantity and volume to contain all liquid and concrete waste generated by washout operations. The length and width of a facility may be increased, at the Contractor's expense, upon approval from the RE.
- Straw bales, wood stakes, and sandbag materials shall conform to the provisions in BMP SC-9, "Straw Bale Barrier."
- Plastic lining material shall be a minimum of 10-mil polyethylene sheeting and shall be free of holes, tears or other defects that compromise the impermeability of the material. Liner seams shall be installed in accordance with manufacturers' recommendations.
- Portable delineators shall conform to the provisions in Standard Specifications Section 12-3.04, "Portable Delineators." The delineator bases shall be cemented to the pavement in the same manner as provided for cementing pavement markers to pavement in Standard Specifications Section 85-1.06, "Placement." Portable delineators shall be applied only to a clean, dry surface.

Temporary Concrete Washout Facility (Type Below Grade)

- Temporary concrete washout facility Type "Below Grade" shall be constructed as shown on page 6, with a recommended minimum length and minimum width of 3m (10 ft). The quantity and volume shall be sufficient to contain all liquid and concrete waste generated by washout operations. The length and width of a facility may be increased, at the Contractor's expense,

upon approval of the RE. Lath and flagging shall be commercial type.

- Plastic lining material shall be a minimum of 10-mil polyethylene sheeting and shall be free of holes, tears or other defects that compromise the impermeability of the material. Liner seams shall be installed in accordance with manufacturers' recommendations.

- The soil base shall be prepared free of rocks or other debris that may cause tears or holes in the plastic lining material.

Removal of Temporary Concrete Washout Facilities

- When temporary concrete washout facilities are no longer required for the work, as determined by the RE, the hardened concrete shall be removed and disposed of in conformance with the provisions in Standard Specifications Section 7-1.13 or 15-3.02. Disposal of PCC dried residues, slurries or liquid waste shall be disposed of outside the highway right-of-way in conformance with provisions of Standard Specifications Section 7-1-13. Materials used to construct temporary concrete washout facilities shall become the property of the Contractor, shall be removed from the site of the work, and shall be disposed of outside the highway right-of-way in conformance with the provisions of the Standard Specifications, Section 7-1.13.

- Holes, depressions or other ground disturbance caused by the removal of the temporary concrete washout facilities shall be backfilled and repaired in conformance with the provisions in Standard Specifications Section 15-1.02, "Preservation of Property."

Maintenance and Inspection

- The Contractor's Water Pollution Control Manager (WPCM) shall monitor on site concrete waste storage and disposal procedures at least weekly or as directed by the RE.

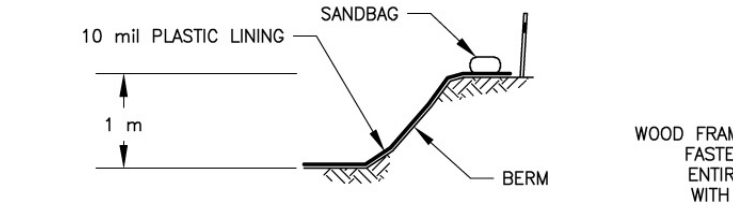
- The WPCM shall monitor concrete working tasks, such as saw cutting, coring, grinding and grooving daily to ensure proper methods are employed or as directed by the RE.

- Temporary concrete washout facilities shall be maintained to provide adequate holding capacity with a minimum freeboard of 100 mm (4 inches) for above grade facilities and 300 mm (12 inches) for below grade facilities. Maintaining temporary concrete washout facilities shall include removing and disposing of hardened concrete and returning the facilities to a functional condition. Hardened concrete materials shall be removed and disposed of in conformance with the provisions in Standard Specifications Section 7-1.13 or 15-3.02.

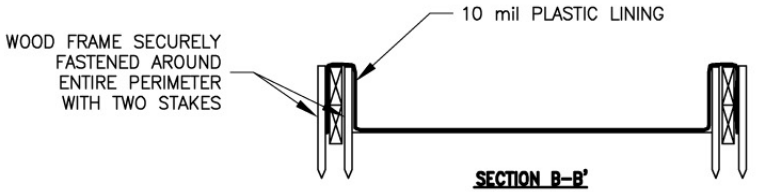
- Existing facilities must be cleaned, or new facilities must be constructed and ready for use once the washout is 75% full.

- Temporary concrete washout facilities shall be inspected for damage (i.e.

tears in polyethylene liner, missing sandbags, etc.). Damaged facilities shall be repaired.



SECTION A–A'
NOT TO SCALE



SECTION B–B'
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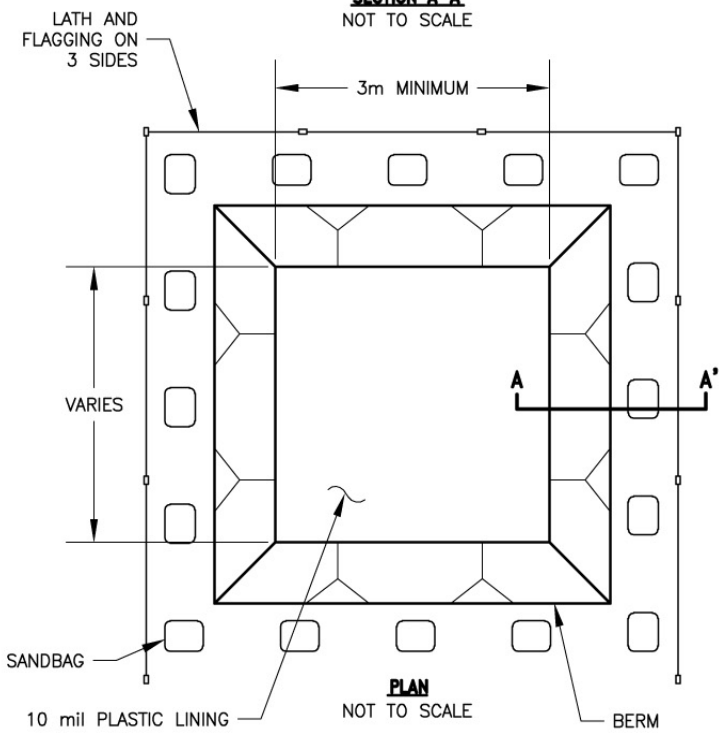
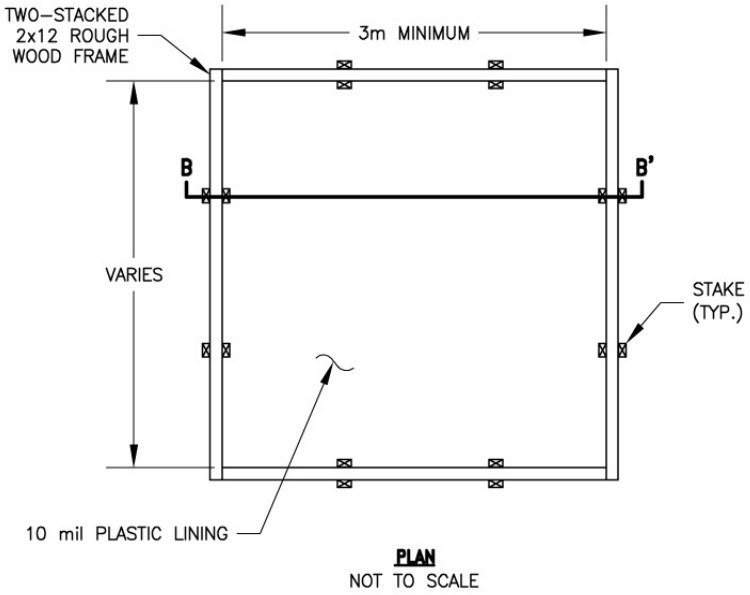


PLAN
NOT TO SCALE

TYPE "BELOW GRADE"

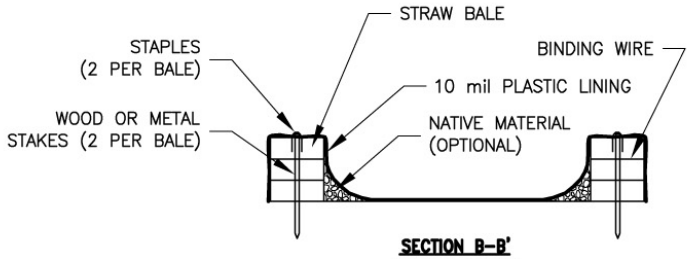


PLAN
NOT TO SCALE

TYPE "ABOVE GRADE" WITH WOOD PLANKS

NOTES:

1. ACTUAL LAYOUT DETERMINED IN THE FIELD.
2. THE CONCRETE WASHOUT SIGN (SEE PAGE 6) SHALL BE INSTALLED WITHIN 10 m OF THE TEMPORARY CONCRETE WASHOUT FACILITY.



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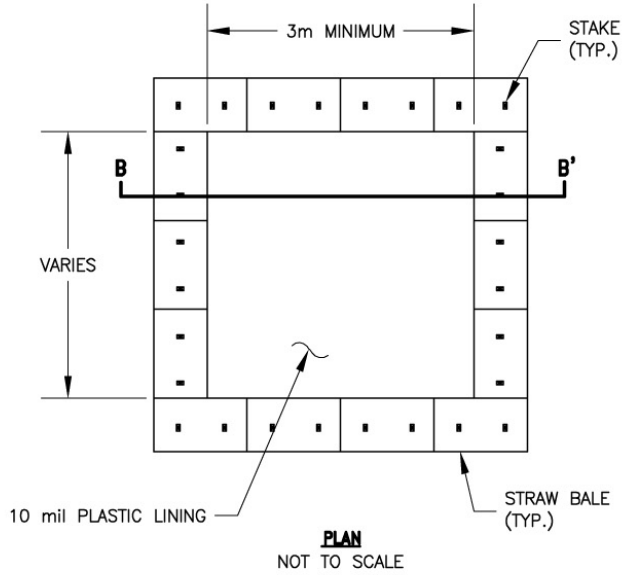
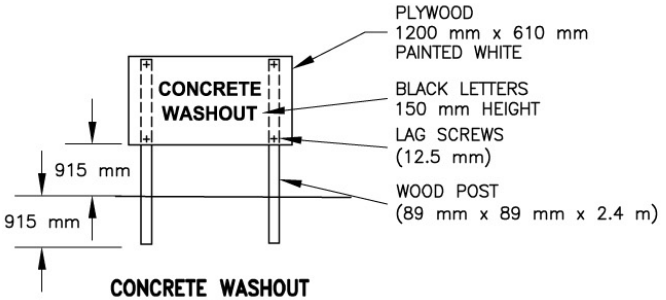
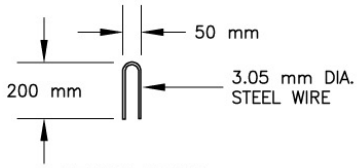


PLAN
NOT TO SCALE

TYPE "ABOVE GRADE" WITH STRAW BALES



CONCRETE WASHOUT SIGN DETAIL (OR EQUIVALENT)



STAPLE DETAIL

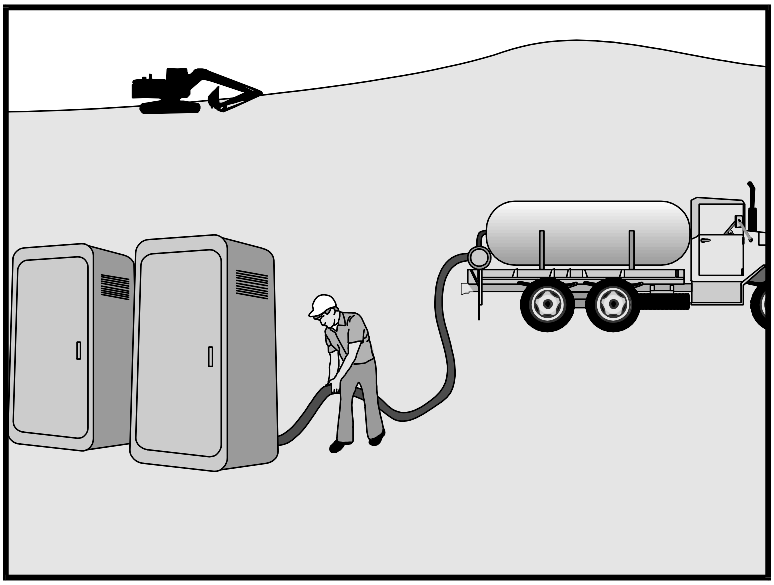
NOTES:

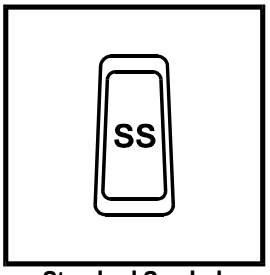
1. ACTUAL LAYOUT DETERMINED IN THE FIELD.
2. THE CONCRETE WASHOUT SIGN (SEE FIG. 4–15) SHALL BE INSTALLED WITHIN 10 m OF THE TEMPORARY CONCRETE WASHOUT FACILITIY.

CALTRANS/FIG4–14.DWG SAC 8–14–02

Sanitary/Septic Waste Management

WM-9





Standard Symbol

BMP Objectives

- ○ Soil Stabilization
- ○ Sediment Control
- ○ Tracking Control
- ○ Wind Erosion Control
- ● Non-Storm Water Management
- ● Materials and Waste Management

Definition and Purpose

Procedures and practices to minimize or eliminate the discharge of construction site sanitary/septic waste materials to the storm drain system or to watercourses.

Appropriate Applications

Sanitary/septic waste management practices are implemented on all construction sites that use temporary or portable sanitary/septic waste systems.

Limitations

- None identified.

Standards and Specifications

Education

- Educate employees, subcontractors, and suppliers on sanitary/septic waste storage and disposal procedures.
- Educate employees, subcontractors, and suppliers of potential dangers to humans and the environment from sanitary/septic wastes.
- Instruct employees, subcontractors, and suppliers in identification of sanitary/septic waste.
- Hold regular meetings to discuss and reinforce disposal procedures (incorporate into regular safety meetings).
- Establish a continuing education program to indoctrinate new employees.

Storage and Disposal Procedures

- Temporary sanitary facilities shall be located away from drainage facilities, watercourses, and from traffic circulation. When subjected to high winds or risk.

- Wastewater shall not be discharged or buried within the highway right-of-way.
- Sanitary and septic systems that discharge directly into sanitary sewer systems, where permissible, shall comply with the local health agency, city, county, and sewer district requirements.
- If using an on site disposal system, such as a septic system, comply with local health agency requirements.
- Properly connect temporary sanitary facilities that discharge to the sanitary sewer system to avoid illicit discharges.
- Ensure that sanitary/septic facilities are maintained in good working order by a licensed service.
- Use only reputable, licensed sanitary/septic waste haulers.

Maintenance and Inspection

- The Contractor's Water Pollution Control Manager (WPCM) shall monitor onsite sanitary/septic waste storage and disposal procedures at least weekly.