

SECTION 01572

STORM WATER POLLUTION PREVENTION

PART 1 — GENERAL

1.01 BACKGROUND

- A. Storm drains discharge directly to creeks and the Bay without treatment. Discharge of pollutants (any substance, material, or waste other than uncontaminated storm water) from this project into the storm drain system is strictly prohibited by the California Regional Water Quality Control Board's (RWQCB) Water Quality Control Plan (Basin Plan), except as provided in Paragraph 3.08 of this specification.

1.02 GENERAL CONTRACTOR SCOPE

- A. Provide all material, labor, equipment, for installation, implementation, and maintenance of all surface-water pollution prevention measures. **Contractor will not be required to maintain post-construction pollution prevention structures.** This work includes the following:

NOTE: Paragraphs preceded by "•••" are applicable only to construction sites that will disturb (e.g., digging, trenching, grading, clearing, filling) greater than 1 acre of site soil. If the site is greater than 1 acre, then all parts of this specification apply (confirm acreage with UC Berkeley Office of Environment, Health & Safety.)

1. Furnishing, placing, and installing effective measures for preventing erosion and runoff of soil, silts, gravel, hazardous chemicals or other materials prohibited by the San Francisco Bay Region Water Quality Control Board from entering the stormwater drainage system.
  2. Management of on-site construction materials in such a manner as to prevent said materials from contacting stormwater or wash water and running off into the storm drain system.
  3. Complying with applicable standards and regulations per Paragraph 1.03.
  4. •••Include post-construction stormwater pollution prevention structures in the stormwater pollution prevention plan. Contractor shall use construction drawings as the reference for post-construction BMPs.
- B. Specifications Included By Reference: **(COORDINATE WITH SECTIONS USED ON THIS PROJECT)**
1. Regulatory Requirements, Section 01012
  2. Contractor's Use of Project Site, Section 01029
  3. Site Preparation, Section 02100
  4. Earthwork and Dewatering Section 02200
  5. Excavation and Backfill for Underground Structures, Section 02220
  6. Trench Excavation and Backfill, Section 02221

- C. In this section, the term "storm drain system" shall include storm water conduits, storm drain inlets and other storm drain structures, street gutters, channels, watercourses, creeks, lakes, and the San Francisco Bay.
- D. Sanitary sewer discharge regulations are intended to provide protection of the sanitary sewer system and East Bay Municipal Utility District's (EBMUD) water pollution control plant. In this section, "sanitary sewer" shall include any sanitary sewer manhole, clean-out, side sewer or other connection to the EBMUD wastewater treatment plant.
- E. Contractor shall have storm drain pollution prevention measures in place and follow this specification during the rainy season (October 1 through May 1) and anytime rain is predicted in the San Francisco Bay Area. It is the responsibility of the Contractor to be prepared for a rain event in the non-rainy season, and to be aware of weather predictions. The University is not responsible for informing the contractor of rain predictions.
- F. Sanitary sewer blockage will likely result in a back-up and overflow to the storm drain system. The contractor shall immediately notify the project manager or the inspector of record if there is a clogged sanitary sewer.
- G. Contractor shall not allow any non-stormwater to enter the storm drain system. Non-stormwater includes domestic supply water used to wash streets, painting and drywall equipment, tools, equipment, or vehicles.

### 1.03 REGULATIONS AND STANDARDS

- A. Contractor shall comply with the following applicable regulations:
  - 1. Clean Water Act, United States Environmental Protection Agency, and Porter-Cologne Clean Water Act, State of California.
  - 2. "San Francisco Bay Basin (Region 2) Water Quality Control Plan" (Basin Plan), California Regional Water Quality Control Board, 1995 Edition.
  - 3. ••• Regional Water Quality Control Board – Construction General Permit — Stormwater Pollution Prevention
- B. Contractor shall comply with the following standards and guidelines on storm drain pollution prevention:
  - 1. "Manual of Standards for Erosion and Sediment Control", Association of Bay Area Governments  
Order From: ABAG  
P.O. Box 2050  
Oakland, CA 94604  
(510) 464-7900

2. "Erosion and Sediment Control Field Manual" California Regional Water Quality Control Board (RWQCB)—San Francisco Bay Region, Third Edition, July 1999.

Order From: San Francisco Estuary Project  
1515 Clay Street, Suite 1400  
Oakland, CA 94612  
(510) 622-2465

3. Stormwater Best Management Practice Handbooks, [www.cabmphandbooks.com](http://www.cabmphandbooks.com).

#### 1.04 SUBMITTALS/DELIVERABLES

- A. Submit a Storm Water Pollution Prevention Plan (SWPPP) to the Capital Projects project manager for plan approval. Contractor shall not disturb soil onsite until the University approves the plan.

••• If the project disturbs greater than 1 acre of soil, the University will send a "Notice of Intent" (NOI) to the RWQCB, with the applicable fee (Contractor shall supply Owner with the check for this fee). Upon completion of the project, the University will send a "Notice of Termination" (NOT), as required by the RWQCB. All permit-related documents shall be submitted to the RWQCB by UC Berkeley EH&S.

The plan shall include the following:

1. Title Page. The title page should primarily identify that the document is a SWPPP. Elements that should be included on the title page are the following:
  - a. Name of the project, and project number,
  - b. Owner and contractor of the project,
  - c. Contact person(s)/address/daytime and emergency phone number.
  - d. ••• Waste Discharge Identification Number (WDID No.) for the project. This number is assigned by the RWQCB upon submission of the NOI. The number should be included in the plan after it is assigned.

2. •••Certification Page  
The contractor shall include a certification page immediately following the SWPPP title page. This page will be signed by the University and state the following:

"I certify under 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, the information submitted, is, to the best of my knowledge and belief, 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.”

\_\_\_\_\_  
Name, Title

\_\_\_\_\_  
Date of Preparation

3. •••Amendments

The contractor shall amend the SWPPP whenever there is a change in construction or operations which may affect the discharge of significant quantities of pollutants to surface waters, ground waters, or a municipal separate storm sewer system. The SWPPP should also be amended if it is in violation of any condition of the State of California General Permit or has not achieved the general objective of reducing pollutants in storm water discharges. In addition, the University may require the contractor to amend the SWPPP if the discharge is in violation of the RWQCB San Francisco Bay Region Basin Plan.

The following items should be discussed in the Amendment section as appropriate:

- a. Location of proposed change should be shown on the site map, and referenced in the Amendment section of the SWPPP.
- b. Describe the existing condition and why it is being amended.
- c. Document who requested the amendment.
- d. Describe the new control measure.
- e. Attach a certification page to the beginning of the amendment.

4. Table of Contents

Include a table of contents in the SWPPP, including page numbers.

5. Introduction

The introduction shall provide the following information:

- a. Type and size of the construction project, including land area in acres).
- b. Project location, including county, and address.
- c. The beginning date of the project groundbreaking.
- d. The beginning and end dates for all phases.

6. Source Identification and Best Management Practices

Identify stormwater and non-stormwater pollutant sources at the construction site. Choose an appropriate stormwater pollution prevention best management practice (BMP) to control the pollution source.

Provide in the SWPPP a geographical description of potential stormwater pollution sources. Topographic and site maps shall be used for this purpose.

a. Topography Map

The map shall extend approximately one quarter mile beyond the construction site boundary and show the following: the construction site, surface water bodies (including springs and wetlands), known wells, an outline of off-site drainage discharging into the

construction site, general topography, and the stormwater discharge locations for construction site stormwater.

Contractor shall use a U.S. Geological Survey quad map and shall modify it to show the required information. Include dimensions, scale, legends, flow direction of water bodies, run-on and run-off water and drainage, drainage locations, and delineation of permanent erosion and sediment control measures.

b. Site Map

The contractor shall identify pollution sources, construct and implement stormwater and non-stormwater pollution prevention BMPs at the construction site. The contractor shall implement the SWPPP. Contractor shall include SWPPP for the post-construction pollution sources and erosion and sediment control BMPs. A separate map may be used for showing the locations of the post-construction BMPs.

The site map shall be one or more detailed map(s) showing the location of pollution sources, (e.g. construction site drainage patterns, grading activities that change drainage patterns, drain inlets, hazardous materials storage, contaminated soil). The site map shall show the location of BMPs designed to prevent pollution sources from causing stormwater or non-stormwater pollution. The Contractor will choose the best available performance-based technology and methods to prevent storm water pollution for construction site activity. Many of those methods are detailed in the reference materials listed in Paragraph 1.03.

The following is a list of BMPs, geographic features or pollution sources to be shown (if applicable) on the site map. Further detail on these topics is in Part 3.0 of this Section (Paragraph number in parentheses).

- Storm water flow drainage patterns and grading activities that change drainage patterns (3.01);
- Perennial, intermittent or seasonal surface water bodies, oceans, lakes, rivers, creeks or streams, ponds, springs, and wetlands. (3.02)
- Areas of existing vegetation (3.03)
- Areas of disturbed soil (3.04)
- Existing and planned paved areas and buildings (3.05)
- Dust suppression water management (3.06)
- Fire hydrant protection (3.07)
- De-watering and sediment settling (3.08);
- Erosion and sediment control measures (3.09);
- On-site soils movement and storage (3.10);
- Site ingress and egress mud tracking prevention (3.11);
- Storm drain inlet protection (3.12);
- Construction materials storage (3.13);

- Concrete, mortar, saw cutting (3.14);
- Sanitary Sewer Discharge Point Identification (3.15);
- Fueling, washing and equipment cleaning (3.16);
- Building wash or hydro-blasting water management (3.17);
- Inspection, monitoring and maintenance of BMP control structures (3.18);
- Spill Prevention and Control (3.19);
- Water Main Break Contingency Plan (3.20);
- House Keeping Practices (3.21);
- Post-construction stormwater run-off control (3.22);
- Personnel training (3.16);
- List of contractors and phone numbers (3.17);
- Or other appropriate site-specific storm drain pollution prevention methods necessary to achieve the objectives stated in subpart 1.02(A).

#### 1.05 ENVIRONMENTAL ENFORCEMENT

The RWQCB, East Bay Municipal Utilities District (EBMUD), and the City of Berkeley have authority to enforce, through codified regulations, any portions of this Section that if not implemented may violate applicable regulations. Agency enforcement may include but is not limited to: citations, orders to abate, bills for cleanup costs and administration, civil suits, and/or criminal charges. Contract compliance action by UC Berkeley shall not be construed to void or suspend any enforcement actions by these or other regulatory agencies.

### PART 2.0 — MATERIALS

#### 2.01 GENERAL

A. Provide materials as required for execution of the work.

### PART 3.0 — EXECUTION

For each applicable sub-parts below, the contractor shall delineate on the site map BMP locations and provide a detailed description in the plan for pollution prevention structures or methods that will be constructed, implemented and maintained on site.

#### 3.01 STORMWATER DRAINAGE PATTERNS AND GRADED SLOPES

A. Drainage patterns shall be shown on the site map. Drainage patterns that are modified during the construction of the project should be clearly shown on the site map. All slopes should indicate grading ratio and flow direction.

- B. •••The size of the construction site (in acres).
- C. •••The run-off coefficient of the site before and after construction
- D. •••The percentage of the area of construction that is impervious before and after construction.

**3.02 SURFACE WATER LOCATIONS**

- A. All surface water locations shall be clearly delineated on the site map. Surface water bodies include: oceans, lakes, rivers, creeks or streams, ponds, springs and wet lands. Include intermittent or seasonal surface water bodies. Estimate the storm water flow onto the site, assuming a 10 year 6-hour rain event. Estimate the volume of water the site would contain in trenches, excavations, pier holes, or pits for the different phases of work.

**3.03 AREAS OF EXISTING VEGETATION**

- A. Contractor shall protect existing vegetation that is to be preserved on the site from mechanical or other injury during the project. Areas of existing vegetation shall be clearly delineated on the site map.

**3.04 AREAS OF DISTURBED SOIL**

- A. Contractor shall clearly identify on the site map all areas of soil disturbance. These areas shall include soil removal or augmentation, such as holes, pits, excavations, trenches, berms, slopes, fill, and imported top soil.

**3.05 EXISTING AND PLANNED PAVED AREAS AND BUILDINGS**

- A. Areas that are covered by concrete, asphalt, or other permanent coverage of the soil shall be clearly delineated on the site map. Imprints of buildings shall also be indicated whether they are permanent or temporary.

**3.06 DUST-SUPPRESSION-WATER MANAGEMENT**

- A. Contractor shall use best available dust suppression equipment and methods to control dust so that the dust does not cause discomfort or nuisance to occupants of the project site neighboring property. Contractor shall control dust suppression water so that it is effective in controlling dust, but does not enter the storm drain system. Contractor shall describe their dust suppression water management methods in this plan.

**3.07 FIRE HYDRANT PROTECTION**

- A. Contractor shall protect fire hydrants on and near the project site from mechanical damage. If the project personnel cause damage that results in a release of fire suppression water, the Contractor shall implement the procedures described in subpart 3.20.

**3.08 DE-WATERING AND SEDIMENT MANAGEMENT**

- A. If stormwater or groundwater in site excavations or drilled holes, (e.g., trenches, pits, pier holes, footings), needs to be removed, it shall be made clean by filtering, settling, or other method capable of removing solids and suspended particles from this water prior to discharge to the storm drain system. The Contractor shall ensure that this discharge complies with all applicable provisions of the Basin Plan (see Paragraph 1.01 of this Section).
- B. If excavation water is domestic supply water, or the water is contaminated with a hazardous substance, then the contractor shall dispose of according to guidance from the PM. For disposal authorization, the contractor shall contact the PM to determine the

discharge requirement. The PM will work with UC Berkeley Office of Environment, Health & Safety (EH&S) who will establish the discharge requirements.

**If the Contractor suspects the presence of contaminated groundwater, or domestic supply water, the Contractor shall immediately notify Owner representative or EH&S at (510) 642-3073. The Contractor shall not attempt to pump out or treat any material suspected of containing a hazardous material or petroleum product.**

### **3.09 DESCRIPTION OF EROSION AND SEDIMENT CONTROL MEASURES**

- A. Provide a description of erosion and sediment control measures that will be used on the site, and correlate the description with the site map (may be listed on the map in a comments section). Areas requiring erosion control measures are exposed soil, such as soil piles, bare soil, sloped soil, and any area of disturbed soil. Erosion control measures include paving, tarp placement, soil blankets, mulching, seeding, hydro-mulching, the use of straw wattles, and spreading straw. Sediment control measures include drain inlet protection, filter fabric, geo-textile silt fencing, gravel placement, gravel or sandbag placement, sediment settling tanks, and straw wattle placement. This list is not all inclusive and the contractor should refer to the resources listed in Paragraph 1.03 of this Section. Both erosion and sediment control practices are designed to be implemented as an integrated system of pollution control. Without erosion controls, sediment controls are easily overwhelmed and will not prevent pollution.

### **3.10 ON-SITE SOILS MOVEMENT AND STORAGE**

- A. The Contractor shall describe and implement proven methods to prevent erosion from soils stored on site.

### **3.11 SITE INGRESS AND EGRESS MANAGEMENT MUD TRACKING PREVENTION**

- A. The Contractor shall ensure that mud is not tracked from the site onto public or campus roads. Contractor shall select the most appropriate BMP to accomplish this requirement.

### **3.12 STORM DRAIN INLET PROTECTION**

- A. The Contractor shall protect storm drain inlets from receiving sediment, hazardous chemicals, gasoline, diesel, oil or grease, trash, debris or other pollutants from the construction site.

### **3.13 CONSTRUCTION MATERIALS STORAGE**

- A. Storage and exposure of raw materials, byproducts, finished products, and hazardous materials containers shall be controlled as described below:
1. All construction materials shall be stored at least ten feet away from storm drain system inlets, catch basins, and curb returns.
  2. The Contractor shall not allow any material to enter the storm drain system.

3. At the end of each working day, the Contractor shall collect and prepare for disposal all scrap, debris, and waste material generated by project activities.
4. During wet weather or when rain is in the forecast, the Contractor shall store materials, (that can flow or be transported by storm water), inside a building or under a secured waterproof covering to prevent accidental release to the storm drain system. Examples: use sealed debris bins in rainy weather; store fuel containers out of the weather; cover soil, sand, or debris piles with tarps.
5. The Contractor is responsible for ensuring that storage and disposal of all hazardous materials brought on site for this project (e.g., coatings, thinners, solvents, and fuels), and all hazardous waste generated during project activities (e.g., waste oil) is in compliance with all applicable federal, state, and local standards and requirements.
6. Liquid materials shall be stored in secondary containment. The containment shall be designed to hold at least 110% of the volume of the largest stored container.

### **3.14 CONCRETE, MORTAR, SAWCUTTING**

- A. For concrete or mortar application to be performed on site (if any), the Contractor shall comply with the following provisions:
  1. Washing sweepings of exposed aggregate concrete into the street or storm drain system [as defined in paragraph 1.02 (C)] is prohibited. Collect and return sweepings to aggregate base stockpile, or dispose of as construction debris.
  2. Do not wash out concrete trucks and equipment into the storm drain system. Whenever possible, perform washout of concrete trucks (if any) and equipment off-site where discharge is controlled.
  3. If on-site washout of trucks and equipment is necessary, then the Contractor shall comply with the following procedures:
    - a. Locate washout area at least 50 feet from storm drains, open ditches or water bodies, preferably in a dirt area.
    - b. Do not allow storm water run-off from the washout area.
    - c. Construct a temporary pit or bermed area large enough to contain the wash-water and surplus concrete waste.
    - d. Wash out concrete waste into the temporary pit where the concrete can set, be broken up, and then disposed of as construction debris. If the volume of water is greater than what will allow concrete to set, allow the wash water to concentrate and/or evaporate, if possible. Otherwise, allow water to settle before filtering it, and then pump to the sanitary sewer (as long as the pH is less than hazardous waste limit of 12.5).
  4. Wash-water from tools used for mixing mortar, in sheet rock work, plaster, drywall, mortar work or similar work shall be settled before disposal to the sanitary sewer. Solids shall be disposed to the debris bin. This wash-water is prohibited from stormwater discharge.

5. Concrete sawing or drill cutting lubricating/cooling water or shall be collected using a wet-vacuum. The lubricating/cooling water shall be settled before disposal to the sanitary sewer. Solids shall be disposed to the debris bin. This lubricant/cooling water is prohibited from stormwater discharge.

### **3.15 SANITARY SEWER DISCHARGE POINT IDENTIFICATION**

- A. If the Contractor will be disposing of water from a settling operation, or any other water approved by EH&S for sanitary sewer disposal, the Contractor will verify with the Physical Plant-Campus Services (PP-CS) utilities department that the manhole used for disposal is a sanitary sewer and not a storm drain. (Note: Do not assume that a manhole is a sanitary sewer, even if the words "sanitary sewer" are embossed on it. Sometimes utility maps and manhole cover designations are incorrect.) The Contractor shall be given PP-CS contact information by the PM.

### **3.16 FUELING, WASHING AND EQUIPMENT CLEANING**

- A. The Contractor shall not perform vehicle cleaning on site, unless a properly designed wash area prevents run-off from entering the storm drain system. Domestic water supply is prohibited from entering the storm drain because it contains chloramines. It can go to the sanitary sewer if the sediment is allowed to settle before discharge and it meets the standards of the EBMUD Wastewater Discharge Permit pollutant strength limits.
- B. If fueling must occur on-site, use designated areas away from drainage. Locate on-site fuel storage tanks within a bermed area designed to hold the tank volume. The area should be covered so that rain water will not get into the bermed area. The bermed area shall be lined so that leaks, spills or drips will not contaminate the soil. Use secondary containment while fueling or changing fluids to catch drips or small spills.
- C. The Contractor shall dispose of wash water from the cleaning of non-hazardous water-based coating equipment (such as latex paints or drywall compounds) and tools to the sanitary sewer. Unused latex paint, oil based paint, used or new paint thinner and solvents are prohibited from disposal to the sanitary sewer and the storm drain system. The Contractor shall dispose of these wastes in accordance with federal, state, and local hazardous waste and solid waste regulations.

### **3.17 BUILDING WASH OR HYDRO-BLASTING WATER MANAGEMENT**

- A. Contractors are required to follow the attached "Procedure for Wastewater Management from UC Berkeley Building Washing and Maintenance Operations" if performing this work. These procedures are in Attachment 1 of this Section.

### **3.18 INSPECTION, MONITORING AND MAINTANCE OF POLLUTION CONTROL SYSTEMS**

- A. Inspect the site before, after, storm events, or during a 24-hour storm event. Inspections shall be done during the storm water observation period (October 1 through April 1) to ensure that storm drain pollution prevention controls are in place. Provide documentation of these inspections, and improvements or modifications of the control systems. Contractor shall designate an inspector and list the name of the inspector in the list of contacts page as described in subpart 1.04(A)(1)(c). Contractor shall maintain structural controls and updates/amendments to the SWPPP. Representatives from UC Berkeley will conduct

periodic inspections of the site to verify adequacy of storm drain pollution prevention controls and compliance with applicable regulations and standards as stated in subpart 1.03(A).

- B. UC Berkeley will disclose historic site activities that may have included the use of hazardous materials (e.g., gas station, dry cleaner, underground storage tank, manufacturing) and that have or are suspected to have caused pollution at the site. The University will write and implement a plan to monitor, sample and analyze stormwater discharges for pollutants related to the construction activity. If applicable to site conditions, Contractor shall include this hazardous materials monitoring plan in the SWPPP.

### 3.19 SPILL PREVENTION AND CONTROL

The Contractor shall take precautions to prevent accidental spills of pollutants, including hazardous materials brought onsite by the Contractor. However, in the event of a spill, the Contractor shall be held responsible for the following:

1. Immediately contain and prevent leaks and spills of prohibited pollutants from entering the storm drain system. Clean up the spill and label the container. Store the container in a safe place and contact the PM to arrange disposal of the waste. The Contractor shall keep a spill kit on site at all times for this purpose.
2. Contractor shall comply with all federal, state, and local hazardous waste requirements and ensure that no spilled materials are washed into the stormwater or non-stormwater systems.
3. **Report any hazardous or unknown material spills immediately to the EH&S at 510-642-3073. If a spill occurs after hours or on a weekend, call 9-911 from campus phones (911 from off-campus phones, or 642-3333 from cellular phones) to contact the UC Berkeley Police Department.**

The Contractor is responsible for ensuring that its employees and subcontractors (if any) working on site are aware of the location of the campus phone nearest the project site.

### 3.20 WATER MAIN AND SANITARY SEWER LINE BREAK CONTINGENCY PLAN

- A. If working on or near a water main line or sanitary sewer line, the Contractor shall have a written emergency response plan that states procedures for responding to a break and release of supply water to the storm drain system. The Contractor shall meet the following requirements:
1. Water Main Work
    - a. Determine the direction of water flow if the main were to break.
    - b. Build a containment berm between the work area and the storm drain inlet(s) that the water would flow into. Make the containment structure large enough to hold the water so that it can be pumped to a sanitary sewer.
    - c. Build this containment structure before digging.
    - d. If there is a water main break, pump the water that collects in the containment structure to a sanitary sewer.

- e. If the containment fails, prevent chlorinated water from entering the storm drain system by placing dechlorination sodium sulfite tablets in the sewage according to Attachment 2 of this Section.
- f. Put in place, before digging, sediment control structures upstream of drain inlets and at drain inlets.
- g. If a break occurs contact the PM or inspector of record immediately. Include in the plan the phone numbers of the PM and EH&S contacts.

2. Sanitary Sewer Line Work

This sub-part applies only to Contractors that are hired to work on sanitary sewer lines and are trained to work near sewage.

- a. Determine where the sewage will flow if the work could cause a blockage.
- b. Build a containment structure between the work area and the storm drain inlet(s) that the sewage water would flow into. Make the containment structure large enough to hold the sewage flow so that it can be pumped to a sanitary sewer.
- c. Build the containment before working on the sewer line. Put in place, before digging, solids (toilet paper, etc.) control structures upstream of drain inlets and at drain inlets.
- d. If a sewage blockage occurs, pump it to a sanitary sewer, and do not allow it to flow into the storm drain system.
- e. If the containment fails, prevent chlorinated water from entering the storm drain system by placing dechlorination sodium sulfite tablets in the sewage according to Attachment 2 of this Section).
- f. If a sewage blockage or spill occurs contact the PM or inspector of record immediately. The PM will immediately notify EH&S. Include in the plan the phone numbers of the PM and EH&S contacts.

3. Excavation Work

This Paragraph applies to Contractors that excavate in the vicinity of sanitary sewer lines and cause or discover a sewage spill, leak or blockage.

- a. Immediately notify the PM. The PM will immediately notify EH&S. Include in the plan the phone numbers of the PM and EH&S contacts.

**3.21 HOUSE KEEPING PRACTICE**

The Contractor shall implement the following applicable good housekeeping practices:

- Store materials that have the potential to be transported to the storm drain system by storm runoff or spillage away from areas of heavy traffic and under cover in a contained area or in sealed waterproof containers.
- Use tarps on the ground to collect fallen debris or splatters that could contribute to storm water pollution.
- Secure opened bags of powdered materials (if any) that could contribute to storm water pollution and visible dust emissions.
- Pick up litter, construction debris, and other waste generated by project activities daily from adjacent areas, including the sidewalk area, gutter, street pavement, and storm drains impacted by the project. All wastes shall be stored in covered containers, disposed of, or recycled immediately.
- Clean sidewalks, driveways, or other paved areas within the construction site to eliminate or prevent mud-tracking conditions. Vacuuming, power sweeping, or manual sweeping is acceptable. Dispose of sweepings in a place that will not

pollute the storm drain system. Domestic water may be used but it shall be contained and directed to landscapes or the sanitary sewer. The discharge of wash-water to the storm drain system is prohibited.

- Inspect vehicles and equipment arriving on-site for leaking fluids, and promptly repair leaking vehicles and equipment. Use drip pans to catch leaks until repairs are made.
- Avoid spills by handling materials carefully. Keep a stockpile of appropriate spill clean-up materials, such as rags or absorbent materials, readily accessible on site. Clean up all spills of materials brought on site for project activities according to Sub-part 3.19.
- Train employees regularly on good housekeeping practices and procedures. Assign responsibility to specific employees for inspecting good housekeeping, and responding to spills.

### **3.22 POST-CONSTRUCTION STORMWATER RUN-OFF CONTROL MEASURES**

- A. All permanent structural and nonstructural control measures that are planned for the project to control pollutants in stormwater discharges after construction is completed shall be delineated on a site map. These controls shall be part of the design of the project and included in the architectural drawings. Post-construction BMPs include, but are not limited to:
1. Minimization of land disturbance
  2. Minimization of impervious surfaces
  3. Treatment of stormwater run-off using infiltration
  4. Water detention/retention
  5. Bio-filter BMPs
  6. Efficient irrigation systems
  7. Ensuring that interior building drains and trash enclosures are tied to the sanitary sewer system, and not the stormdrain system
  8. Appropriately designed and constructed energy dissipation devices
- B. Post construction BMPs must be consistent with all local post-construction stormwater management requirements, policies and guidelines.
- C. Contractor shall provide operation and maintenance manuals for post-construction stormwater management controls installed as part of this project. Funding for the operation and maintenance of the BMPs will be identified by the PM, and included in the manuals by the contractor.
- D Contractor shall refer to construction drawings for post-construction BMPs and include them in the SWPPP.
- E. ••• Develop a maintenance plan for the permanent BMPs installed at the site.

### **3.23 PERSONNEL TRAINING**

- A. The Contractor shall train its employees working on the site on the requirements contained in this Section. The Contractor shall document this training in writing. University

representatives for the site will request to see the training materials and records at the onset of work.

- B. The Contractor shall inform all subcontractors (if any) of the water pollution prevention requirements contained in this specification and include appropriate subcontract provisions to ensure that these requirements are met.

**3.24 LIST OF CONTRACTORS DESIGNATED SWPPP CONTACTS AND PHONE NUMBERS**

- A. Provide a list of employees that will be responsible for writing, implementing and updating the SWPPP.

SECTION 02210

Attachment 1

**Procedure For Wastewater Management From  
UC Berkeley Building Washing And Maintenance Operations**

This procedure describes wastewater management for UC Berkeley building washing operations and is to be used in conjunction with all operations where building exterior surface cleaning generates wash-water. Wastewater from washing operations is prohibited from discharge to storm drains because it may contain chloramines, cleaning compounds, or materials dislodged from the building surfaces during cleaning (such as leaded paint). Wastewater may be disposed to landscaped areas or the sanitary sewer on the condition that contaminant concentrations will not harm the landscape or the sewage treatment facility's operations.

Offsite disposal through the Office of Environment, Health & Safety (EH&S) may be necessary if contaminants in the wash-water exceed sewer discharge contaminant limits. If cleaning compounds containing surfactants, detergents or other chemicals are used in the cleaning process and there are sludges or residues that need to be disposed of, contact EH&S, 642-3073, for disposal guidance.

**Building Washing Wastewater Management Procedures**

*Unpainted Buildings*

- Construct a containment system to eliminate wash-water discharge to the storm drain.
- Divert wash-water onto landscaping (preferable) or into the sanitary sewer.
- If high pressure water is used (e.g., hydro-blasting to remove spalled concrete) then settle out the solids using a containment tank, or filter out the solids using filter fabric or other solids removal method.

*Painted Buildings*

- Construct a containment system to eliminate wash-water from draining to the storm drain or the sanitary sewer system.
- Pour, pump or drain the wash-water into a containment tank.
- Use a filter system (e.g., cartridge filters) to remove suspended paint solids. Use settling methods to minimize the amount of solids entering the filter system. This will prevent filter saturation.
- Sample the filtered water before it is discharge to the sanitary sewer. Have the sample analyzed for the 13 priority pollutant metals (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, zinc) and any other chemicals of concern that could be present to determine whether or not the water is suitable for sanitary sewer discharge. Send a copy of the analytical results to EH&S for disposal method determination.
- If the analytical results exceed the EBMUD discharge limits, consider options for using a finer pore size filter, or dispose of the water through EH&S. EH&S will arrange to ship the water to a properly permitted disposal facility.

## SECTION 02210

### Attachment 2

#### Procedure For Preventing Chlorinated Water From Entering The Storm Drain System Using Sodium Sulfite Tablets

##### **Purpose**

These procedures describe how to manually dechlorinate discharges of domestic water using sodium thiosulfate solution prior to release into storm sewer systems or receiving waters in accordance with Regional Water Quality Control Board requirements.

This procedure is limited to domestic water discharges with a chlorine residual of 2 mg/L or less. Dechlorinating superchlorinated water (chlorine residual of 50-200 mg/L) is not addressed in this procedure. Contact EH&S, 642-3073, for guidance on discharging superchlorinated water.

##### **Dechlorination Procedure Overview**

Dechlorination of chlorinated water discharges is accomplished by the addition of tablets comprised of 90% sodium sulfite to the discharge flow. For discharges from trenches during main breaks, the tablets are placed inside synthetic mesh fabric pockets sewn together in a grid or line (called a "dechlor mat" or "dechlor strip" respectively). The dechlor mat or strip is laid across the flow path or over the storm drain and either weighted down or nailed to the street to keep it in place.

In all cases, as the discharged water flows over and around the tablets, chemical is released as the water contacts the tablets, reacting with and destroying the chlorination. The key to the success of this procedure requires effective contact between the flow and the tablets. This is accomplished by ensuring the tablets are well-distributed across the flow path. The tablets must be spaced no more than 4" apart for gravity discharges at ambient pressure. For discharges under pressure (such as pumping), the tablets should be spaced as close together as possible without constricting the flow. The various tablet holder designs are fabricated to ensure that this specification is met.

##### **Selection Criteria For Dechlor Mat or Dechlor Strip For Use In Gravity Discharges**

This decision is ultimately up to the preferences of the user as long as the tablets are well distributed across the flow path. The mats can cover a larger area so if the discharge flow is large and spread out, mats may be easier to use than multiple strips. Mats are also sized to cover storm drain inlets so if the flow is not well channelized, it may be easier to locate mats over the storm drain(s) the flow is ultimately discharging into rather than laying out strips or mats upstream of this point. Strips are smaller, take up less space in vehicles and multiple strips can be used to cover larger flows so their convenience and flexibility make them the appropriate choice unless some of the conditions described above are encountered.

##### **Dechlorination Equipment**

The following equipment is needed for dechlorination when following this procedure:

Dechlor mat (3' x 4') -or-  
Dechlor strip (3' x 6") -or-  
Diffuser with tablet chamber -or-  
Diffuser with mesh tablet holder -and-  
Dechlor tablets (45 lb bucket) -and-  
DPD Powder-Pop Dispenser -and-

Attachment 2 continued

**WARNING!**

Don't use sodium sulfite with calcium hypochlorite (HTH) or sodium hypochlorite (used to disinfect water distribution system mains or appurtenances). These two chemicals can react when mixed in the presence of water. The reaction can produce heat and both hydrogen and chlorine gas, creating both a potentially toxic and explosive/flammable atmosphere. These chemicals and associated mixing and dispensing equipment must be kept segregated from each other at all times. Should the chemicals become mixed, call EH&S 642-3073.

**Procedure 1—Dechlorination For Releases From Trenches During Water Main Breaks**

**Fill Pockets With Tablets**

Put one tablet in each pocket of the dechlor mat or strip. If the pocket contains a partially-used tablet, add another tablet only if there is room.

**Place Dechlor Mat Or Strip In flow Path**

Place the dechlor mat or strip across (perpendicular to) the flow path downstream of sediment control devices (e.g., pea gravel bags). Nail the mat or strip to the street using street nails (through the grommets in either end of the mat) or weigh the mat or strip down to ensure that it stays in place. If the flow path is more than 4' wide (width of dechlor mat) when using a dechlor mat or 3' wide (width of dechlor strip) when using a dechlor strip or there is more than one flow path (flow is spreading out in more than one direction), use additional mats to ensure all water from the source is crossing a mat. If the flow is deep (more than 1" above the top of the dechlor mat) and/or the flowrate is very high (>300 GPM), a second mat should be placed downstream of the first mat to ensure adequate dechlorination.

**Monitor Mat Or Strip**

Check the dechlor mat periodically to ensure some tablet remains in each pocket and that all flow is crossing at least one mat.

**Clean-up**

When the discharge is complete, move the dechlor mat(s) or strip(s) to the storm drain(s) where the discharge was entering, placing it on the upstream side of the grate. Hose the flow path to remove any tablet residual, ensuring that the flow enters the storm drain(s) upon which the dechlor mat(s) or strip(s) is installed. If the flow path separates and some flow travels to a different storm drain, a dechlor mat or strip should be installed at that location as well.

**Tablet Disposal**

**Tablets Shelf Life**

Tablets have a relatively long shelf life unless exposed to high temperatures (>85°F). At higher temperatures, tablets may crumble. During the summer months, crews may need to place enough tablets for daily use in coolers for storage on trucks at the beginning of each workday. Supply buckets must be kept in a cool storage location.

**Powdered Tablet Waste Disposal**

As long as tablets are in large enough pieces to be retained within the mesh dechlor, diffuser chamber or diffuser mesh pockets, they can be used for dechlorination per the procedures contained herein. Small amounts of powdery or granular tablet waste from tablet supply buckets or secondary containers should be mixed with water and discharged to the sanitary sewer.