



Pollution Prevention for Construction Sites

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Pollution prevention

40 CFR Part 122

- (C) Requirements for construction site operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality

NCGo1 Section F

- Must identify and manage construction site pollutants, including PAMs and flocculants, equipment operation and maintenance, material handling, building material waste handling, stockpiles, and handling of concrete.

What are pollution prevention measures?

- Structural and non-structural controls
- Prevent pollutants from leaving a construction site
- Potential pollutants:
 - Sediment
 - Oils, greases, solvents
 - Fertilizers, pesticides, other chemicals
 - Concrete washout
 - Trash and construction debris
 - Other non-stormwater discharges

6 key pollution prevention principles

Provide for waste management

Establish building material staging areas

Designate paint and concrete washout areas

Establish equipment/vehicle fueling and maintenance practices

Control equipment/vehicle washing and allowable stormwater discharges

Develop spill prevention and response plan

Provide for waste management



Trash disposal, recycling, material handling and cleanup



Written procedures:

- ✓ Dry materials stored without cover
- ✓ Wet materials should have cover
- ✓ Locate away from storm drains, streams
- ✓ Inspect during routine inspections
- ✓ Haul off when full



Written procedures:

- ✓ Locate away from storm drains, streams
- ✓ Inspect during routine inspections
- ✓ Haul off when full
- ✓ Maintain to function properly

Written procedures:

- ✓ Encounter hazardous materials



Establish building material staging areas



Building materials, chemicals, paints, etc.



Written procedures:

- ✓ Clean, organized laydown area to aid inspections
- ✓ Store chemicals, fuels, etc. under cover or with secondary containment
- ✓ Inspect areas during routine inspections





Designate paint and concrete washout areas



Locations for concrete and paint washout



Written procedures:

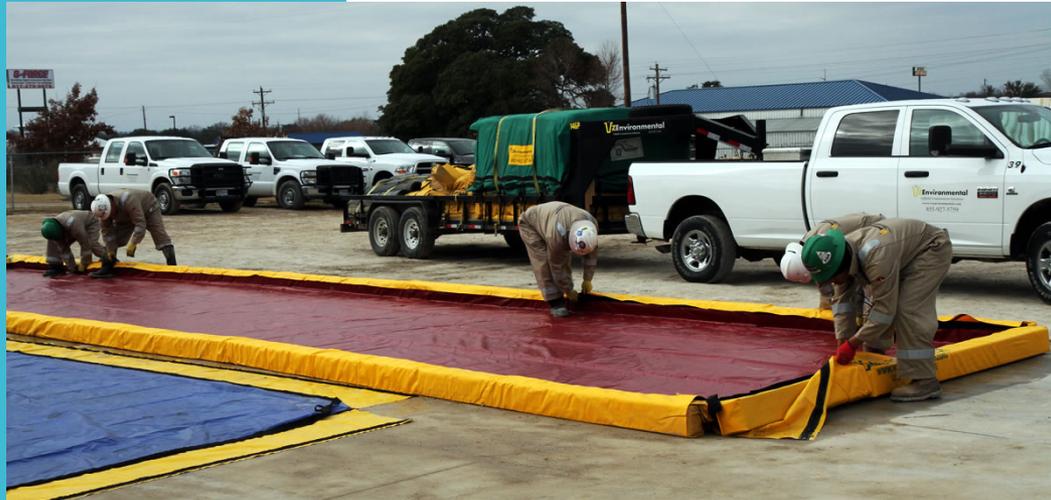
- ✓ Require designated washout areas
- ✓ Provide a detail for its construction
- ✓ Note that it can move with concrete work
- ✓ Locate away from streams, storm drain



Establish
equipment/vehicle fueling
and maintenance practices



*Offsite maintenance, drip
pans, recycle oil, maintenance
procedures*



Written procedures:

- ✓ Cars and other more mobile construction vehicles should be taken off site for maintenance
- ✓ Designate an area for maintenance for less mobile equipment
 - ✓ Collect fluids and recycle where possible
 - ✓ Have spill cleanup materials available
 - ✓ Use secondary containment for equipment leaks and major maintenance
- ✓ Drip/spill prevention at fueling stations – consider containment for fuel transfer area

Control
equipment/vehicle
washing and allowable
stormwater discharges



*Offsite facilities, washing
stations*

Written procedures:

- ✓ Wash vehicles offsite
- ✓ Identify best washing area onsite:
 - ✓ Well away from streams
 - ✓ Washwater either infiltrates or goes into sanitary sewer
 - ✓ Absorbent socks at stormwater inlets

Develop spill prevention and response plan



Spill kit, spill procedures



Written procedures:

- ✓ Reduce the chance of spills,
- ✓ Stop the source of spills,
- ✓ Contain and clean up spills,
- ✓ Dispose of materials contaminated by spills
- ✓ Have spill kit materials on site
- ✓ Train personnel responsible for spill prevention
- ✓ SPCC Plan for 1320 gal oil/fuel

Designers

- Identify structural pollution prevention practices on the plan set, where appropriate
- Include the SWPPP sheets in plan
- If also project engineer during construction, educate contractors and inspectors on structural and non-structural practices

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes		
Site Area Description	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
<ul style="list-style-type: none"> Temporary grass seed covered with straw or other mulches and tackifiers Hydroseeding Rolled erosion control products with or without temporary grass seed Appropriately applied straw or other mulch Plastic sheeting 	<ul style="list-style-type: none"> Permanent grass seed covered with straw or other mulches and tackifiers Geotextile fabrics such as permanent soil reinforcement matting Hydroseeding Shrubs or other permanent plantings covered with mulch Uniform and evenly distributed ground cover sufficient to restrain erosion Structural methods such as concrete, asphalt or retaining walls Rolled erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

- Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
- Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
- Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
- Provide ponding area for containment of treated Stormwater before discharging offsite.
- Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

EQUIPMENT AND VEHICLE MAINTENANCE

- Maintain vehicles and equipment to prevent discharge of fluids.
- Provide drip pans under any stored equipment.
- Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
- Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
- Remove leaking vehicles and construction equipment from service until the problem has been corrected.
- Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

- Never bury or burn waste. Place litter and debris in approved waste containers.
- Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
- Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
- Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
- Anchor all lightweight items in waste containers during times of high winds.
- Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
- Dispose waste off-site at an approved disposal facility.
- On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

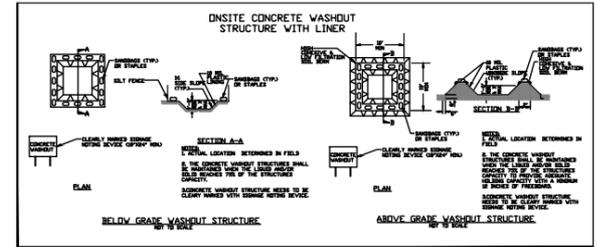
- Do not dump paint and other liquid waste into storm drains, streams or wetlands.
- Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Contain liquid wastes in a controlled area.
- Containment must be labeled, sized and placed appropriately for the needs of site.
- Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

PORTABLE TOILETS

- Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
- Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
- Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

EARTHEN STOCKPILE MANAGEMENT

- Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
- Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
- Provide stable stone access point when feasible.
- Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.



CONCRETE WASHOUTS

- Do not discharge concrete or cement slurry from the site.
- Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
- Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
- Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
- Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
- Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
- Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
- Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
- Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
- At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

- Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
- Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
- Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
- Do not stockpile these materials onsite.

HAZARDOUS AND TOXIC WASTE

- Create designated hazardous waste collection areas on-site.
- Place hazardous waste containers under cover or in secondary containment.
- Do not store hazardous chemicals, drums or bagged materials directly on the ground.

Inspectors

- Check pollution prevention measures during every inspection
- Document locations of structural controls, need for repair/cleanout
- Look for evidence of pollutant discharges
- Recommend additional pollution prevention controls and update the SWPPP if new sources of potential pollutants are found
- Understand the basics of P2:
 - Take activity offsite
 - Cover activity
 - Secondary containment around activity
 - Educate contractors

Please Remember to Complete the End of Workshop Evaluation
(separate from the PDH sponsor evaluation)
bit.ly/Raleigh2019-ESC-Eval

