

Preparing & Implementing Construction Storm Water Pollution Prevention Plans

ASCE Webinar
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IDS Engineering Group, Inc.

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Agenda

- ✓ Introduction
- ✓ Brief Overview of EPA CGP
- ✓ Required Sections of SWPPP
- ✓ Construction BMPs and Requirements
- ✓ Review of EPA Sample Construction SWPPP

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Introduction

- ✓ Speaker
- ✓ Purpose of Webinar
 - Understand permit requirements
 - Understand what a SWPPP is expected to look like
- ✓ Reasons for Paying Attention
 - Increased EPA emphasis on enforcement of offending construction sites
 - Increase in local enforcement due to municipal storm water programs
 - Fines ranging up to \$157,500 (or more)

Overview of EPA Construction General Permit (CGP)

- ✓ Disturbance of *One or More Acres* of Total Land Area
- ✓ Permit Issued February 2012
 - Does not include numeric (280 NTU) limits
 - Does include increased requirements
 - Slowly getting incorporated into State permits



- Where do EPA Permits Apply?

www.epa.gov/npdes/authorization-status-epas-construction-and-industrial-stormwater-programs#undefined

Overview of EPA Construction General Permit (CGP)

- ✓ Part 1 - Discharges Authorized & Application/Notification Requirements
- ✓ Part 2 – Effluent Limitations Applicable to All Construction Sites
- ✓ Part 3 – Water Quality-Based Effluent Limitations
- ✓ Part 4 – Inspections
- ✓ Part 5 – Corrective Actions
- ✓ Part 6 – Training Requirements
- ✓ Part 7 – *Stormwater Pollution Prevention Plan Requirements*
- ✓ Part 8 – Terminating Coverage
- ✓ Part 9 – Conditions Applicable to Certain States/Areas
- ✓ Appendices

www.epa.gov/npdes/stormwater-discharges-construction-activities#cgp



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Construction Issues



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Purpose and Philosophy of SWPPP

- ✓ Site-Specific, Dynamic, Flexible
- ✓ Broad-Based, Low-Cost Management Practices
 - Good housekeeping, employee training, spill prevention procedures
 - Containment, mitigation, cleanup, treatment
- ✓ Information Can be Found in EPA Guidance Manual (2007)
- ✓ EPA and Many States have Templates Available

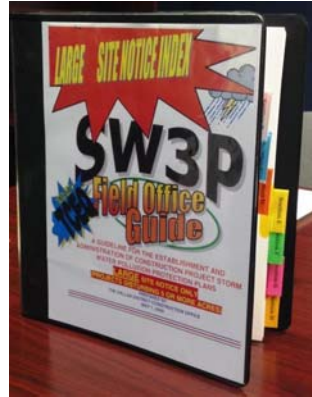


Steps In Developing Construction SWPPP

1. Identify Responsible Parties for On-Site SWPPP Implementation
2. Identify Potential Sources of Pollution Which May Reasonably be Expected to Affect the Quality of Storm Water Discharges From Site
3. Identify, Describe, and Ensure Implementation of BMPs for the Site
4. Ensure Compliance With All Terms & Conditions of the Permit
Before, during, and after construction

Construction SWPPP Sections

1. Responsible Parties and Contact Information
2. Site Evaluation, Assessment, and Planning
3. Documentation of Compliance with Other Programs/Requirements
4. Erosion and Sediment Controls
5. Pollution Prevention Standards
6. Inspection and Corrective Action
7. Training
8. Certification and Notification
Appendices



Section 1: Responsible Parties & Contact Information

- Information About Operators
 - Who they are and what they control
 - Include a 24-hour emergency contact
- Include Subcontractors
 - Anticipated subcontractors should be included and modified as appropriate
 - Use a subcontractor agreement if appropriate
- Identify a “Stormwater Team”
 - Those responsible for creating, maintaining, and complying with the CGP
 - Owner/GC, Site Superintendent, Inspector.
 - Ensure each member is identified in SWPPP with contact info.

Section 2: Site Evaluation, Assessment, and Planning

- Include basic site information including address, lat-long, and whether site is located on Federal or Tribal lands.
- Location of Discharge(s)
 - To an MS4
 - To a Surface Water
 - Both?
 - Note if a surface water is within 50' of disturbed areas – special buffer requirements will apply.
- Information on Receiving Waters
 - Name
 - Impairment (TMDL) status?
 - Other special waters if present
 - Outstanding Resource Waters, Special Waters, Tribal Waters, etc.
 - CGP includes listing of these waters



Section 2 (cont'd)

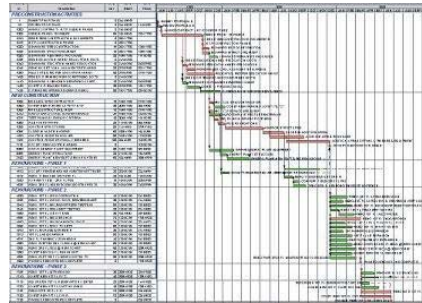
- Nature of the Construction Activity
 - General description
 - Size of project including total to be disturbed and total open at any one time
- Identify Construction Support Activities
 - Concrete/asphalt plants
 - Equipment staging/storage areas
 - Soil disposal areas/borrow areas
 - Include description(s), location(s), and contact info for each CSA...

 - BUT...only include if present on site or if offsite but wholly dedicated to site

Section 2 (cont'd)

■ Sequence of Construction Activities

- General sequence with estimated dates for each major activity
- When are controls in place?
- When does disturbance happen?
- When does disturbance end (temporary or permanent)?
- When does stabilization need to be in place?
- When is project complete?



Section 2 (cont'd)

▪ Identify Allowable Non-stormwater Discharges

Flows from the site not related to precipitation are allowed as long as they fall on the “allowable” list.

- Emergency firefighting activities
- Fire hydrant flushing*
- Landscape irrigation
- Washwater for vehicles, equipment, buildings, or pavements*
- Dust control water
- Potable water/water line flushing*
- Air conditioning or compressor condensate
- Groundwater or spring water*
- Foundation or footing drains*
- Construction dewatering water*

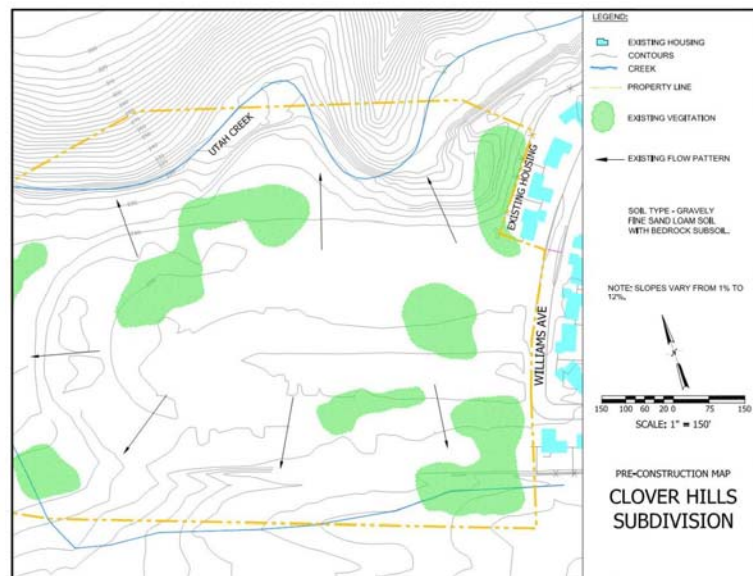
- All other non-stormwater discharges are not permitted

Section 2 (cont'd): Site Maps

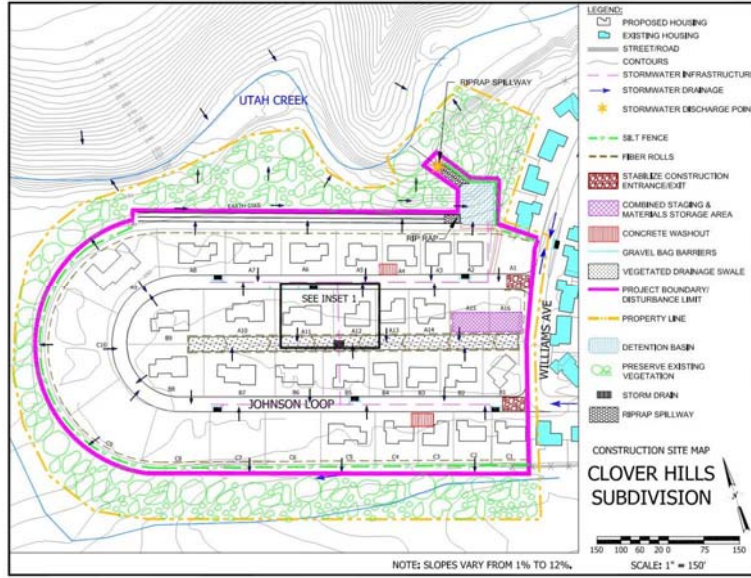
✓ At a Minimum, Must Identify:

- Topography and drainage patterns
 - Disturbed and undisturbed areas
 - Locations of all Waters of the U.S., wetlands, and crossings
 - Slopes before and after grading
 - Stockpile areas for sediment, soil or fuels/chemicals
 - Location of all pollutant-generating activities
 - Construction exits
 - Location of control measures (BMPs) and buffers (if used)
 - Discharge point(s) for stormwater and allowable non-stormwater
 - Listing of any offsite material, waste, or equipment storage areas
 - Areas of any federally-listed critical habitat for endangered/threatened species
- May need to use a series of maps to identify all required areas

Site Maps

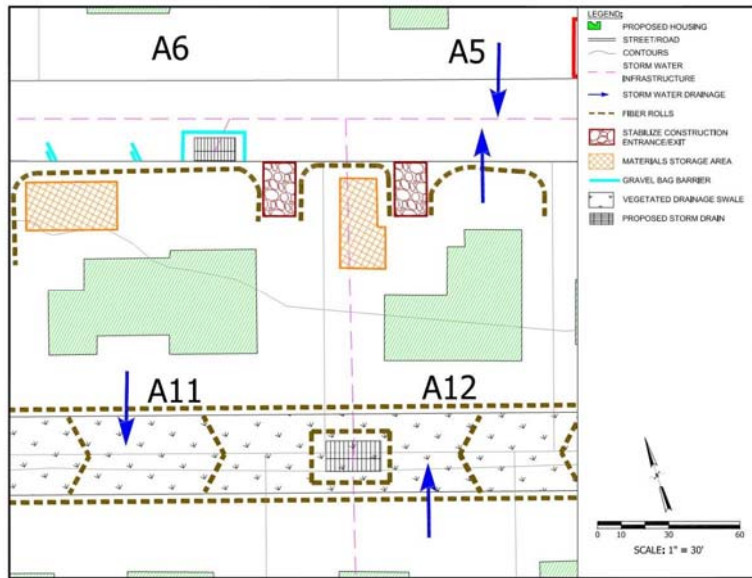


Site Maps



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Site Maps



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Section 3: Documentation of Compliance

- ✓ For Areas Under EPA CGP, document compliance with the following federal programs
 - Endangered Species Act
 - National Historic Preservation Act
 - Safe Drinking Water Act UIC Requirements
 - Include documentation in SWPPP including letters, emails, etc to confirm compliance

- Many/most states cover compliance with these regulations under other programs or separate permits rather than in their stormwater permit. Read your state permit to ensure compliance!



Section 4: Erosion and Sediment Controls (BMPs)

- ✓ Describe all controls/BMPs installed and maintained at the site
 - Buffers
 - Perimeter Controls
 - Construction Exits
 - Stockpiles
 - Dust Control
 - Slope Stability
 - Inlet Protection
 - Stormwater Channels
 - Sediment Basins
 - Dewatering
 - Others

For each BMP, SWPPP include:

- General description of BMP
- Design specification
- Dates to be installed
- Maintenance requirements



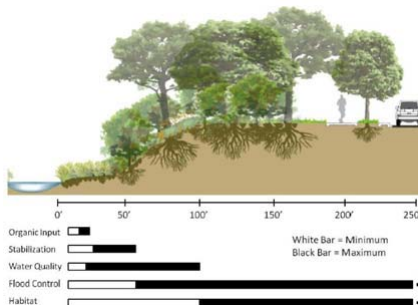
Erosion and Sediment Controls (BMPs)

- ✓ Buffers
- ✓ Stabilization Practices
 - Vegetative
 - Non-vegetative
- ✓ Structural Practices
 - Erosion controls
 - Sediment capture measures
 - Stormwater management features



Buffer Requirements

- ✓ New EPA CGP Requirement
 - If a surface water is within 50 Feet of earth disturbance, must provide a natural buffer or equivalent sediment controls (if a discharge can occur).



Buffer preserved during site development

Stabilization Practices

- ✓ Temporary or Permanent Seeding
- ✓ Mulching
- ✓ Geotextiles
- ✓ Sodding
- ✓ Protection of Trees
- ✓ Preservation of Mature Vegetation
- ✓ Other Appropriate Measures



Stabilization Requirements of EPA CGP

- ✓ Implement Stabilization Practices “Immediately”
 - Within 14 days after activity on a portion of the site ceases
- ✓ Complete Stabilization Practices Within 14 days
 - 7 days if discharging to a sensitive water
- ✓ Exceptions
 - In arid, semi-arid or drought-stricken areas
 - Circumstances beyond permittee control
 - Document exceptions in SWPPP



Structural Practices

- ✓ Sediment barriers
- ✓ Sediment basins
- ✓ Sediment traps
- ✓ Inlet barriers
- ✓ Stormwater management measures
- ✓ Others



Above Photos Courtesy Kristin Langway, P.E., NMP Engineering Consultants, Inc

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Storm Water Management Measures

- ✓ Temporary Management Measures
 - Dikes, Swales, Slope Drains, etc.
- ✓ Permanent Management Measures
 - In many cases are required by municipalities
 - Detention ponds (including wet ponds)
 - Vegetated swales and on-site Infiltration (GI or LID practices)



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Structural Requirements of EPA General Permit

- ✓ Minimize disturbed area
- ✓ Design, install, and maintain according to local conditions
- ✓ Direct runoff to vegetated areas
- ✓ Install perimeter controls
- ✓ Minimize sediment track-out, dust, slope disturbance, and soil compaction
- ✓ Control discharges from stockpiled sediment or soil
- ✓ Preserve topsoil
- ✓ Protect storm drain inlets

Structural Requirements of EPA CGP (cont'd)

- ✓ Optional Requirements – Only if these BMPs are Used
 - Stormwater conveyance channel must be designed to minimize erosion
 - Sediment basins
 - Design for 2-YR, 24-HR storm runoff over drainage area OR 3,600 cubic feet per acre of drainage area
 - Use surface withdrawal outlet structures to minimize pollutant discharge
 - Prevent erosion of basin and outlet
 - Site sediment basin outside natural waters or buffers
- ✓ Use of chemical treatment – lots of requirements..
- ✓ Construction dewatering
 - Allowable non-stormwater discharge as long as “uncontaminated”
 - Clean it up before discharging

Section 5: Pollution Prevention Standards

✓ Identify and Describe all Potential Pollutant-Generating Activities at the Site

- Include an inventory of all activities, pollutants, and locations.

✓ Address the Following Areas

- Spill prevention & response
- Vehicle fueling & maintenance
- Vehicle & equipment washing
- Storage & handling of materials & wastes
- Cleaning of paint applicators and containers
- Fertilizers
- Others

For each area, SWPPP includes:

- General description
- Design specification
- Dates to be installed
- Maintenance requirements

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Pollution Prevention Standards

✓ Pay Attention to Critical Areas

- Fueling/Maintenance Areas
- Concrete Washout Areas
- Trash/Dumpster Areas
- Construction Entrances/Exits



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Section 6: Inspection and Corrective Action

- ✓ Prepare Inspection Plan
 - Personnel and qualifications/training
 - Inspection schedule
 - Inspection reports
 - Corrective actions & reports
 - Record-keeping
 - Signatory requirements and delegation of authority



Photo Courtesy of Jon Jones, P.E., Wright Water Engineers, Inc.

Inspections of Plan Features

- Inspectors Must be “Qualified Personnel” Provided by Discharger
- Inspection Requirements
 - Include disturbed areas, storage areas, and construction exits
 - Required at least once every 14 days (monthly in arid or semi-arid areas, in winter, and after stabilization) AND
 - Required within 24 hours of a storm producing at least 0.25 inches of rainfall OR
 - Can be scheduled every 7 days to relieve the 0.25-inch storm requirement
 - *Different states have different requirements!!!*

Inspections of Plan Features

- ✓ Inspection Reports
 - Corrective actions required for BMPs and SWPPP
 - Identify all sources of non-stormwater and associated BMPs
 - Identify all material storage areas and discharges
 - Identify any incidents of permit noncompliance
 - If none, certify that the site is in compliance with the SWPPP and CGP
 - Report on activities to address inspection items (Repair, Clean-up, Remedy)
 - Timelines for corrective actions included in permit – usually 7 days.
- ✓ Signed by Authorized Company Official or Representative
 - And Signed by Inspector (May be the Same Person)
 - List of authorized/delegated officials must be included in SWPPP

Section 7: Training

- ✓ Minimum Training Requirements
 - Prior to obtaining permit coverage, ensure that proper personnel are trained and ready to implement SWPPP
- ✓ Personnel
 - All personnel who are responsible for the design, installation, maintenance or repair of stormwater controls
 - Inspectors
 - Any other people that it makes sense to train.
- ✓ Subjects
 - Locations of controls and maintenance requirements
 - Procedures to follow for permit compliance
 - Inspection and corrective action requirements
- ✓ Training is an ongoing process as personnel change
- ✓ Document training with list of subjects and sign-in sheets

Section 8: Certification and Notification

- ✓ SWPPP Signed by authorized official(s)
- ✓ Notice of Intent submitted by operator(s)
- ✓ SWPPP not submitted for regulatory review unless requested (in most states)
- ✓ SWPPP must be available for regulatory review upon request

Appendices

- ✓ Include additional necessary documentation
- ✓ EPA CGP List (not all required)
 - Appendix A - Site Maps
 - Appendix B – Copy of CGP
 - Appendix C – NOI & Response Documents
 - Appendix D – Inspection Forms
 - Appendix E – Corrective Action Forms
 - Appendix F – SWPPP Amendment Log
 - Appendix G – Subcontractor Certifications/Agreements
 - Appendix H – Grading and Stabilization Activities Log
 - Appendix I – Training Log
 - Appendix J – Delegation of Authority
 - Appendix K – ESA Documentation
 - Appendix L – NHPA Documentation

Actions During Construction

- ✓ Plan must be modified as necessary to reflect changes in project scope, schedule, or approach
 - SWPPP Amendment Log is good place to document these changes
- ✓ Plan features must be maintained in good operating condition
- ✓ Use the SWPPP, change it as necessary, keep it current
 - Areas can be noted in SWPPP during construction as fully stabilized – reduced inspection requirements or no more permit coverage necessary

Recordkeeping During Construction

- ✓ Maintain SWPPP documents and records on site
- ✓ SWPPP is available to the public
 - Sign must be posted at entrance describing location of plan

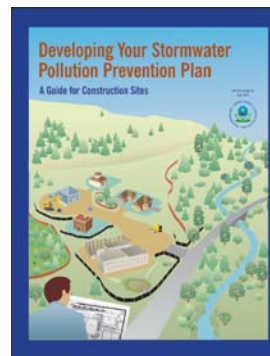


Actions When Construction is Complete

- ✓ Permit coverage should be terminated within 30 days of completed stabilization
- ✓ Stabilization is completed when:
 - All temporary controls are removed
 - All permanent controls are in place and functional
 - All vegetated areas are at least 70% viable (NOT hydroseeded)
- ✓ Notice of Termination (NOT) is used
- ✓ Records must be maintained for 3 years after permit termination

Sample SWPPP

- ✓ EPA Guidance Manual includes sample SWPPPs for residential and commercial developments
 - Provides the “Official Answer”
 - Illustrates all permit concepts
 - Based on 2007 permit so not all requirements now included
 - New templates are available for 2012 CGP



<http://www.epa.gov/npdes/stormwater-discharges-construction-activities#resources>

Sample SWPPP

Stormwater Pollution Prevention Plan (SWPPP)
Clear Hill, Subdivision

Stormwater Pollution Prevention Plan

for:

Clear Hill Subdivision
2203 Williams Avenue
Stonewall, ID 83341
(208) 441-4444

Operator(s):

KBI Development, LLC
Mr. Doug Lewis
13 South Avenue
Boise, ID 83701
(208) 555-5555
Dlewis@kbi.com

SWPPP Contact(s):

Ms. Dorothy Williams
KBI Development, LLC
13 South Avenue
Boise, ID 83701
(208) 555-5552
Dwilliams@kbi.com

SWPPP Preparation Date:
11/01/2008

Estimated Project Dates:
Project Start Date: 08/08/2008
Project Completion Date: 10/01/2008

Questions?



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