STATE OF COLORADO

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
Water Quality Control Division – Stormwater Program

STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY

STORMWATER MANAGEMENT PLAN PREPARATION GUIDANCE

Revised 4/2011

Contact information

Colorado Department of Public Health and Environment
Water Quality Control Division – Stormwater Program
WQCD-Permits-B2
4300 Cherry Creek Drive South
Denver, Colorado 80246-1530

Telephone: (303) 692-3517
Email: cdphe.wqstorm@state.co.us
Web Page: www.cdphe.state.co.us/wq/PermitsUnit

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APPLICABILITY

This application is for use by all entities engaged in construction activities to obtain coverage under the general permit for Stormwater Discharges Associated with Construction Activities (the Stormwater Construction Permit). **Construction activity** refers to ground surface disturbing activities, which include, but are not limited to, clearing, grading, excavation, demolition, installation of new or improved haul roads and access roads, staging areas, stockpiling of fill materials, and borrow areas. Construction does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of the facility.

Stormwater Construction Permit coverage is required by State and Federal regulations for stormwater discharged from any construction activity that disturbs at least 1 acre of land (or is part of a larger common plan of development or sale that will disturb at least 1 acre). A "**common plan of development or sale**" is a site where multiple separate and distinct construction activities may be taking place at different times on different schedules, but still under a single plan. This includes phased projects, projects with multiple filings or lots, and projects in a contiguous area that may be unrelated but still under the same contract. If the project is part of a common plan of development or sale, the disturbed area of the entire plan must be used in determining permit requirements, and all portions of the project must be covered.

NOTES:

Stormwater Management Plan Preparation Guidance – The guidance, available as Appendix A to this application, has been revised and updated.

Additional Guidance – Additional information, including further discussion on permittee and operator liability, is available in the Stormwater Fact Sheet – Construction, available from the Division's web site at www.cdphe.state.co.us/wq/PermitsUnit. If you have questions on completing this application, you may contact the Division at cdphe.wqstorm@state.co.us or (303) 692-3517.

INSTRUCTIONS

A) Submitting the Application

Application Due Date: At least **ten days** prior to the anticipated start of construction, the owner or operator of the construction activity must submit an application as provided by the Water Quality Control Division (Division). This form may be reproduced, and is also available from the Division's web site (see previous page for address/contact information). Applications received by the Division are processed, and a permit certification and other relevant materials will be sent to the attention of the legally responsible person .

Permit Fee: Do not send any payment with this application. You will be billed once you are covered under a permit. Current permit fees can be obtained from the Division's web site at www.cdphe.state.co.us/wq/PermitsUnit.
Application Completeness: The application must be completed accurately and in its entirety or the application will be deemed incomplete—processing of the application will not begin until all required information is received. One original copy of the completed application (**no faxes or e-mails**) must be submitted to the Division to initiate the application process (see page 1 above for address/contact information).

Do not include a copy of the Stormwater Management Plan, unless requested by the Division.

B) Who May Apply For and Maintain Permit Coverage

The Permit applicant must be a legal entity that meets the definition of the owner and/or operator of the construction site, in order for this application to legally cover the activities occurring at the site. The applicant must have day-to-day supervision and control over activities at the site and implementation of the SWMP. Although it is acceptable for the applicant to meet this requirement through the actions of a contractor, as discussed in the examples below, the applicant remains liable for violations resulting from the actions of their contractor and/or subcontractors. Examples of acceptable applicants include:

- **Owner or Developer** - An owner or developer who is operating as the site manager or otherwise has supervision and control over the site, either directly or through a contract with an entity such as those listed below.
- **General Contractor or Subcontractor** - A contractor with contractual responsibility and operational control (including SWMP implementation) to address the impacts construction activities may have on stormwater quality.
- **Other Designated Agents/Contractors** - Other agents, such as a consultant acting as construction manager under contract with the owner or developer, with contractual responsibility and operational control (including SWMP implementation) to address the impacts construction activities may have on stormwater quality.

An entity conducting construction activities at a site may be held liable for operating without the necessary permit coverage if the site does not have a permit certification in place that is issued to an owner and/or operator. For example, if a site (or portion of a site) is sold or the contractor conducting construction activities changes, the site's permit certification may end up being held by a permittee (e.g., the previous owner or contractor) who is no longer the current owner and/or operator. In this case, the existing permit certification will no longer cover the new operator's activities, and a new certification must be issued, or the current certification transferred.

Utilities, Other Subcontractors, etc.: A separate permit certification is not needed for subcontractors, such as utility service line installers, where the permittee or their contractor is identified as having the operational control to address any impacts the subcontractor's activities may have on stormwater quality. Although separate permit coverage may not be needed in some cases, these entities are not exempt from the stormwater regulations for all of their projects and may still be held liable if their activities result in the discharge of pollutants.

Leases: When dealing with leased land or facilities, the lessee shall be considered the "owner" for the purposes of stormwater permitting if they are responsible for the activities occurring at the site.

C) Permitting for Developments with Multiple Owners and/or Operators

For situations where multiple entities meet the definition of owners and/or operators for different portions of a development (e.g., a single development with multiple lots owned and operated by separate entities), it is essential that the permittees, owners, and operators at the site correctly follow the guidance on who may apply for coverage under the Stormwater Construction Permit (see Part B, above).

When a portion of a permitted site is sold to a new owner, a permit certification must be in place that is held by an entity meeting the definition of owner and/or operator of that sold lot. This may be accomplished in one of the following ways:

- **Coverage Under the Existing Certification** – Activities at the sold area may continue to be covered under an existing permit certification for the project if the current permittee meets the definition of operator for the sold area. To meet the definition of operator, the current permittee must have contractual responsibility and operational control to address the impacts that construction activities at the sold area may have on stormwater runoff (including implementation of the SWMP for the sold area). Therefore, a legally binding agreement must exist assigning this responsibility to the current permit holder on behalf of the new owner and/or operator for the sold area. It is not necessary to notify the Division in such case. However, documentation of the agreement must be available upon request, and the SWMP must be maintained to include all activities covered by the Stormwater Construction Permit
- **New Certification Issued – Reassignment** – A new permit certification may be issued to the new owner and/or operator of the sold area. The existing permittee and the new owner and/or operator must complete the Reassignment Form (available from the Division's web page, see page 1) to remove the sold area from the existing permit certification and cover it under a certification issued to the owner and/or operator of the sold area. Both entities must have SWMPs in place that accurately reflect their current covered areas and activities.

A more detailed explanation is available in the Stormwater Fact Sheet – Construction, available from the Division's web site (see page 1).

This certification includes an acknowledgment that the applicant understands that the permit coverage, and therefore the applicant's liability, will be for the entirety of the construction project described and applied for, until such time as the application is amended or the certification is transferred, inactivated, or expired.

Detailed instructions for filling out the application are included in the application.

APPENDIX A

SWMP GUIDANCE
PREPARING A STORMWATER MANAGEMENT PLAN (SWMP)
Stormwater Construction General Permit

Contents

A. INTRODUCTION

This guidance document is designed to help you develop a Stormwater Management Plan (SWMP) for your construction project, as required for compliance with the CDPS general permit for Stormwater Discharges Associated with Construction Activities (the Stormwater Construction Permit). It explains what each of the SWMP requirements means, and gives some options for you to consider in developing Best Management Practices (BMPs) that are best suited to your site during construction.

This guidance document primarily addresses the SWMP requirements in the Stormwater Construction Permit. Other requirements and limitations, such as records retention, reporting, inspections, etc., are detailed in the Stormwater Construction Permit itself. Also note that the SWMP and the Stormwater Construction Permit only cover discharges of stormwater.

Stormwater Management Plan (SWMP) Goal: To identify possible pollutant sources that may contribute pollutants to stormwater, and identify Best Management Practices (BMPs) that, when implemented, will reduce or eliminate any possible water quality impacts. The SWMP must be completed and implemented at the time the project breaks ground, and revised as construction proceeds, to accurately reflect the conditions and practices at the site.

Construction activities use and produce many different kinds of pollutants which may impact water quality. The main pollutant of concern at construction sites is sediment. Grading activities remove grass, rocks, pavement and other protective ground covers, resulting in the exposure of underlying soil to the elements. The soil is then easily picked up by wind and/or washed away by rain or snowmelt. For example, sediment runoff rates from construction sites are typically 10 to 20 times greater than those from agricultural lands, and 1,000 to 2,000 times greater than those of forest lands. During a short period of time, construction activity can contribute more sediment to streams than would normally be deposited over several decades, causing physical and biological harm to our State's waters. The added sediment chokes the river channel and covers the areas where fish spawn and plants grow. Excess sediment can cause a number of other problems for waterbodies, such as increased difficulty in filtering drinking water, and clouding the waters which can kill plants growing in the river and suffocate fish. A number of pollutants, such as nutrients, are absorbed onto sediment particles and also are a source of pollution associated with sediment discharged from construction sites.

Uncontrolled storm water discharges from areas of urban development and construction activity negatively impact receiving waters by changing the physical, biological, and chemical composition of the water, resulting in an unhealthy environment for aquatic organisms, wildlife, and humans.

In addition, construction activities often require the use of toxic or hazardous materials such as petroleum products, fertilizers, pesticides and herbicides, and building materials such as asphalt, sealants and concrete, which may pollute stormwater. These materials can be harmful to humans, plants and aquatic life.

B. GENERAL GUIDANCE

BMPs: Best Management Practices (BMPs) encompass a wide range of erosion and sediment control practices, both structural and non-structural in nature, that are intended to reduce or eliminate any possible water quality impacts from stormwater leaving a construction site. The individual BMPs appropriate for a particular construction site are largely dependant of the types of potential pollutant sources present, the nature of the construction activity, and specific-site conditions.

Nonstructural BMPs, such as preserving natural vegetation, preventive maintenance and spill response procedures, schedules of activities, prohibition of specific practices, education, and other management practices are mainly operational or managerial techniques.

Structural BMPs include treatment processes and practices ranging from diversion structures and silt fences, to retention ponds and inlet protection.

Most of the BMPs referenced here are widely used in the construction industry. They generally involve a simple and low cost approach, and can be very effective when properly installed and maintained.

The Stormwater Construction Permit requires the use of a self-designed SWMP. This plan is based on the use of BMPs. For construction sites, there are several types of BMPs: those that prevent erosion, those that prevent construction materials from introducing pollutants to stormwater, and those that remove sediment and other pollutants before they can be discharged (see box, to right).

Best Management Practices to prevent the erosion and discharge of sediment typically include:

1. **Erosion Control BMPs**
   Practices to prevent the erosion of soil.
   Examples:
   - minimizing the amount of disturbed soil through phasing, temporary stabilization, or leaving existing vegetation
   - diverting runoff around disturbed areas
2. **Sediment Control BMPs**
   Practices to remove sediment from runoff.
   Examples:
   - retaining stormwater in ponds or behind silt fence to settle out sediment
   - filtering stormwater through filter fabric on inlets

Implementation: The SWMP focus is primarily on controls used **during** ground surface disturbing activities. This focus means that many sediment control BMPs, such as silt fence and inlet protection, must be installed **before** disturbing activities begins, **not after**.

Common Sense Approach: Your SWMP is intended to be a usable document, not a paper exercise. Therefore, do not include practices that may sound good, but are unreasonable or not feasible for your site. Failure to implement your SWMP, even if the BMPs listed do not make sense, puts you in automatic violation of the Stormwater Construction Permit. For example, a blanket statement that runoff from all disturbed areas will be controlled by silt fences, even if the slope or channels are too steep/narrow for this particular BMP, would be unreasonable.

On the other hand, if a particular BMP is listed in the SWMP, but then later turns out to be impractical or ineffective, the SWMP **must** be amended to reflect the changes/improvements made.

SWMP Items, Format: When preparing your plan, **make sure to address each item included in this guidance.** If it is not applicable to your site, briefly explain why. A simple "Not Applicable" is not enough. Failure to address each item is a violation of the Stormwater Construction Permit.

In addition, your SWMP should follow the same format as the SWMP requirements listed in Section C, below. That is, even if you are using an existing document (such as plans and specs) that addresses the required SWMP items, you should include a cross-reference for each of the SWMP items that indicates where it can be found in your existing document. You **must** be able to provide all required components of the SWMP to a State, EPA, or local agency inspector at your site, so the location and format of the information must be clear to the site personnel in charge of SWMP implementation.

Existing Controls: Note that the SWMP should include any existing stormwater controls at your site, not just new or proposed ones. It can also include any erosion, sediment or drainage controls which are required by other regulations, such as local erosion and sediment control ordinances, if you are also using them to meet the SWMP requirements.

Control Implemented by Other Parties: A permittee will often have to rely on controls implemented by other parties to ensure adequate management of stormwater runoff. For example, if a permit certification is obtained to cover a lot in a larger development, the permittee may need to rely on BMPs implemented by an entity in charge of the larger development, such as street sweeping, inlet protection, or a water quality detention pond that treats runoff from several different lots. In such situations, the BMPs implemented by the other party must be fully addressed by the permittee's SWMP, and written

agreements must exist between the permittee and the party implementing the BMP(s) to ensure adequate operation and maintenance of those BMPs. Additional guidance is available in the Stormwater Fact Sheet for Construction, available from the Division's web site at www.cdphe.state.co.us/wq/PermitsUnit.

SWMP Availability: A copy of the SWMP **must be kept on site**, readily available to the operator, and to Division or EPA personnel for review during inspections. City, county, and local agencies may also request the SWMP as part of a local oversight program. If an office location is not available at the site, the SWMP must be managed so that it is available at the site when construction activities are occurring (e.g., by keeping the SWMP in a superintendent's vehicle.)

C. STORMWATER MANAGEMENT PLAN REQUIRMENTS

In this section, the text in ***italics***, and marked with the **Permit** banner, is quoted directly from the Stormwater Construction Permit. The text in standard typeface is provided as guidance in the preparation of your SWMP. The references (Part I.C, for example) correspond to the location of the item in the Stormwater Construction Permit, unless it specifically references a section in this document.

C.1 SWMP GENERAL REQUIREMENTS

Permit

*Part I.B Stormwater Management Plan (SWMP) - **General Requirements***

1. A SWMP shall be developed for each facility covered by this permit. The SWMP shall be prepared in accordance with good engineering, hydrologic and pollution control practices. (The SWMP need not be prepared by a registered engineer.)

2. The SWMP shall:

a) Identify all potential sources of pollution which may reasonably be expected to affect the quality of stormwater discharges associated with construction activity from the facility;

b) Describe the practices to be used to reduce the pollutants in stormwater discharges associated with construction activity at the facility; and ensure the practices are selected and described in accordance with good engineering practices, including the installation, implementation and maintenance requirements; and

c) Be properly prepared, and updated in accordance with Part I.D.5.c, to ensure compliance with the terms and conditions of this permit.

3. Facilities must implement the provisions of the SWMP as written and updated, from commencement of construction activity until final stabilization is complete, as a condition of this permit. The Division reserves the right to review the SWMP, and to require the permittee to develop and implement additional measures to prevent and control pollution as needed.

4. The SWMP may reflect requirements for Spill Prevention Control and Countermeasure (SPCC) plans under section 311 of the CWA, or Best Management Practices (BMPs) Programs otherwise required by a separate CDPS permit, and may incorporate any part of such plans into the SWMP by reference, provided that the relevant sections of such plans are available as part of the SWMP consistent with Part I.D.5.b.

For any sites with permit coverage before June 30, 2007, the permittee's SMWP must meet the new SWMP requirements as summarized in Section II.I of the rationale. Any needed changes must be made by October 1, 2007.

The General Requirements section provides the broad expectations for the preparation, contents and implementation of a SWMP. The specific items that must be included in the SWMP are addressed in the SWMP Contents sections below.

C.2 SWMP CONTENTS – Narrative Site Description

Permit

Part I.C.1 Stormwater Management Plan (SWMP) – Contents: ***Site Description***

The SWMP shall include the following items, at a minimum:

Site Description. The SWMP shall clearly describe the construction activity, to include:

a) The nature of the construction activity at the site.
b) The proposed sequence for major activities.
c) Estimates of the total area of the site, and the area and location expected to be disturbed by clearing, excavation, grading, or other construction activities.
d) A summary of any existing data used in the development of the site construction plans or SWMP that describe the soil or existing potential for soil erosion.
e) A description of the existing vegetation at the site and an estimate of the percent vegetative ground cover.
f) The location and description of all potential pollution sources, including ground surface disturbing activities (see Part I.A.2.b), vehicle fueling, storage of fertilizers or chemicals, etc.
g) The location and description of any anticipated allowable sources of non-stormwater discharge at the site, e.g., uncontaminated springs, landscape irrigation return flow, construction dewatering, and concrete washout.
h) The name of the receiving water(s) and the size, type and location of any outfall(s). If the stormwater discharge is to a municipal separate storm sewer system, the name of that system, the location of the storm sewer discharge, and the ultimate receiving water(s).

This part requires a narrative description of the overall scope and physical characteristics of the project, as follows:

a) Include a description of the construction activities at the site (e.g., type of project, a summary of the grading activities, installation of utilities, paving, excavation, landscaping, etc) and the final disposition of the property.
b) Describe the sequence of events involved in the construction project, such as grading, excavation, etc.
c) This information, which is also required in the application, is useful in determining the extent of control measures needed.
d) Data describing soils or erosion potential will typically not be needed. This information only needs to be included if it was used in development of the SWMP, such as for BMP design.
e) It is necessary to include the percentage of existing vegetative ground cover in order to determine, after construction, when the site has been finally stabilized. See Part I.C.4 of the Stormwater Construction Permit (also Section C.5 of this document), for final stabilization criteria. Final stabilization of the site is necessary before coverage under the Stormwater Construction Permit can be terminated.
f) Describe all materials and activities at the site that may have an impact on stormwater. These may include such things as: ground disturbing activities; equipment or vehicle washing; fertilizers, chemicals, or other materials storage; vehicle maintenance or fueling; waste incineration, treatment, storage or disposal; haul roads; off-site vehicle tracking; loading/unloading areas, etc.
g) Will there be any discharge from the project site during construction that is not from stormwater? If so, describe the source and how it will be handled.
h) The receiving water information is also required in the permit application. For example, "runoff from the east side of the site will go to a roadside ditch which discharges to Jimmy Smith Gulch; runoff from the west side of the site will go to an unnamed tributary to Westerly Creek."

C.3 SWMP CONTENTS – Site Map

Permit

Part I.C.2 Stormwater Management Plan (SWMP) – Contents: ***Site Map***

The SWMP shall include a legible site map(s), showing the entire site, identifying:

a) construction site boundaries;
b) all areas of ground surface disturbance;
c) areas of cut and fill;
d) areas used for storage of building materials, equipment, soil, or waste;
e) locations of dedicated asphalt or concrete batch plants;
f) locations of all structural BMPs;
g) locations of non-structural BMPs as applicable; and
h) locations of springs, streams, wetlands and other surface waters.

A site map must be developed for each construction project. The site map must show those items listed above. It does not need to be drawn to scale, but it should be legible and easy to read. Maps that are part of the construction plans, such as a grading plan, are a good base for developing the site map, if they are amended to include all required information as discussed below. Local municipalities may also have maps suitable as bases to begin mapping procedures. If no other suitable base maps are available, one must be developed. Regardless of the source of the base map, the site map needs to be of suitable scale to show the construction portion of the site and the features within it.

Using Construction Plans, Plans Developed to Meet Local Stormwater Requirements, or Other Plans:
In many cases, some of the information required for the SWMP will also be included in items such as construction plans, documents developed for a local stormwater program, material management plans, etc. These materials may be used to meet the SWMP requirements, if they are amended and/or supplemented to include all required information. If the SWMP will be incorporated into the construction plan, all of the required narrative information must also be included in the plans, or developed as a separate document. If a separate document is used for some of the information not in the construction plans, or if the information will be included in several locations, the permittee must still be able to provide all required components of the SWMP to a State or EPA inspector. If this approach is used, it is highly recommended that an index be provided that references the location(s) of all information required for the SWMP.

In addition to the items specifically mentioned in the permit, above, it is useful to also indicate on the map the following:

- Drainage basins for each outfall – Field inspection can usually accomplish this task with acceptable accuracy. Look for high areas such as crests of hills, parking lots, roads, etc., which would form the division between drainages. Gullies and swales are indicators of stormwater flow direction. Obviously, if runoff is observed during a storm, most uncertainties can be eliminated. The drainage areas shown should include the portions of the site where the activities described in I.C.1.f of the Stormwater Construction Permit (see the permit language in Section C.2, above) occur, as well as those portions (such as upslope areas) contributing stormwater that mixes with runoff from the construction area.
- Surface water bodies – Mark on the site map any surface water bodies, including dry water courses, lakes, streams, springs, wetlands, detention ponds, roadside or irrigation ditches, etc. These do not necessarily need to be within the construction portion of the site, but may be adjacent to it or impacted by stormwater runoff. Also include any existing storm sewers.
- Existing and planned structural stormwater pollution control measures – Show on the map the location of any structural stormwater pollution control measures, such as detention ponds, diversion ditches, covered material storage areas, fuel farm secondary containment structures, etc. Refer to the guidance on how to "Document Selected BMPs in the SWMP" in Section C.4, below.
- Areas where construction activities take place – for those construction activities identified in Part I.C.1.a of the Stormwater Construction Permit (see the permit language in Section C.2, above).

In addition, other features could be included to make the SWMP a more comprehensive and usable plan. For example, a later section of the SWMP includes requirements for material handling and spill prevention procedures, which could include a site

map showing where materials are stored. By including materials handling, loading and storage areas on the site map, all information would be in one place on a single base map. Also, including such items as site entrance(s), vehicle parking areas and direction of stormwater flow on the site map adds to its overall utility

.

Refer to Section D of this guidance for sources of sample maps, such as the Douglas County Grading, Erosion, and Sediment Control (GESC) Manual and the Construction Industry Compliance Assistance Center.

C.4 SWMP CONTENTS – Stormwater Management Controls

Permit

Part I.C.3 Stormwater Management Plan (SWMP) – Contents: ***Stormwater Management Controls***

The SWMP must include a description of all stormwater management controls that will be implemented as part of the construction activity to control pollutants in stormwater discharges. The appropriateness and priorities of stormwater management controls in the SWMP shall reflect the potential pollutant sources identified at the facility.

The description of stormwater management controls shall address the following components, at a minimum:

This is the key part of the SWMP – a narrative description of the appropriate stormwater management controls for the permitted site. As further addressed below, in many cases it may be necessary to supplement the narrative description with technical drawings in order to accurately communicate the design standards for certain structural BMPs.

Permit

Part I.C.3 Stormwater Management Plan (SWMP) – Contents: ***SWMP Administrator***

a) SWMP Administrator - The SWMP shall identify a specific individual(s), position or title who is responsible for developing, implementing, maintaining, and revising the SWMP. The activities and responsibilities of the administrator shall address all aspects of the facility's SWMP.

a. SWMP Administrator: The SWMP Administrator can be an individual(s), position or title – this entity is responsible for developing, implementing, maintaining, and revising the SWMP. Remember that the SWMP Administrator is the contact for all SWMP-related issues and is the person responsible for its accuracy, completeness, and implementation. Therefore, the SWMP Administrator should be a person with authority to adequately manage and direct day-to-day stormwater quality management activities at the site.

Permit

Part I.C.3 Stormwater Management Plan (SWMP) – Contents: ***Identification of Potential Pollutant Sources***

b) Identification of Potential Pollutant Sources - All potential pollutant sources, including materials and activities, at a site must be evaluated for the potential to contribute pollutants to stormwater discharges. The SWMP shall identify and describe those sources determined to have the potential to contribute pollutants to stormwater discharges, and the sources must be controlled through BMP selection and implementation, as required in paragraph (c), below.

At a minimum, each of the following sources and activities shall be evaluated for the potential to contribute pollutants to stormwater discharges, and identified in the SWMP if found to have such potential:

1) all disturbed and stored soils;
2) vehicle tracking of sediments;
3) management of contaminated soils;
4) loading and unloading operations;
5) outdoor storage activities (building materials, fertilizers, chemicals, etc.);
6) vehicle and equipment maintenance and fueling;
7) significant dust or particulate generating processes;
8) routine maintenance activities involving fertilizers, pesticides, detergents, fuels, solvents, oils, etc.;
9) on-site waste management practices (waste piles, liquid wastes, dumpsters, etc.);
10) concrete truck/equipment washing, including the concrete truck chute and associated fixtures and equipment;
11) dedicated asphalt and concrete batch plants;
12) non-industrial waste sources such as worker trash and portable toilets; and
13) other areas or procedures where potential spills can occur.

b. Identification of Potential Pollutant Sources: The first thing to do is evaluate all pollutant sources and activities at the site for the potential to contribute pollutants to stormwater discharges. Part I.C.3.b of the Stormwater Construction Permit (see permit language above) lists 13 pollutant sources that must be evaluated for the reasonable potential to contribute pollutants to runoff. During the evaluation, consider the following types of conditions that might affect the potential for a pollutant source to contribute pollutants to stormwater:

- the frequency of the activity (i.e., does it occur every day, or just once a month; can it be scheduled to occur only during dry weather?);
- characteristics of the area where the activity takes place, e.g., area, surface type (pavement, gravel, vegetation, etc.), and physical characteristics such as site gradients and slope lengths;
- ability of primary and secondary containment (fuel tanks, drum storage, etc.) at product storage and loading/unloading facilities to prevent and contain spills and leaks;
- proximity of product storage and loading/unloading facilities to waterways or drainage facilities;
- concentration and toxicity of materials which may to be found in the site's stormwater runoff
- contamination of storage facilities/containment with stored materials (e.g., used oil drums or tanks coated with spilled oil)

Each pollutant source recognized through this process as having the potential to contribute pollutants to stormwater, must be identified in the SWMP along with the specific stormwater management control (BMPs) that will be implemented to adequately control the source. Note: the actual evaluation of the potential pollutant sources does NOT need to be included in the SWMP – just the resultant pollutant sources and their associated BMPs.

Part I.C.3 Stormwater Management Plan (SWMP) –

c) Best Management Practices (BMPs) for Stormwater Pollution Prevention - The SWMP shall identify and describe appropriate BMPs, including, but not limited to, those required by paragraphs 1 through 8 below, that will be implemented at the facility to reduce the potential of the sources identified in Part I.C.3.b to contribute pollutants to stormwater discharges. The SWMP shall clearly describe the installation and implementation specifications for each BMP identified in the SWMP to ensure proper implementation, operation and maintenance of the BMP.

1) Structural Practices for Erosion and Sediment Control. The SWMP shall clearly describe and locate all structural practices implemented at the site to minimize erosion and sediment transport. Practices may include, but are not limited to: straw bales, wattles/sediment control logs, silt fences, earth dikes, drainage swales, sediment traps, subsurface drains, pipe slope drains, inlet protection, outlet protection, gabions, and temporary or permanent sediment basins.

2) Non-Structural Practices for Erosion and Sediment Control. The SWMP shall clearly describe and locate, as applicable, all non-structural practices implemented at the site to minimize erosion and sediment transport. Description must include interim and permanent stabilization practices, and site-specific scheduling for implementation of the practices. The SWMP should include practices to ensure that existing vegetation is preserved where possible. Non-structural practices may include, but are not limited to: temporary vegetation, permanent vegetation, mulching, geotextiles, sod stabilization, slope roughening, vegetative buffer strips, protection of trees, and preservation of mature vegetation.

3) Phased BMP Implementation. The SWMP shall clearly describe the relationship between the phases of construction, and the implementation and maintenance of both structural and non-structural stormwater management controls. The SWMP must identify the stormwater management controls to be implemented during the project phases, which can include, but are not limited to, clearing and grubbing; road construction; utility and infrastructure installation; vertical construction; final grading; and final stabilization.

4) Materials Handling and Spill Prevention. The SWMP shall clearly describe and locate all practices implemented at the site to minimize impacts from procedures or significant materials (see definitions at Part I.E.) that could contribute pollutants to runoff. Such procedures or significant materials could include: exposed storage of building materials; paints and solvents; fertilizers or chemicals; waste material; and equipment maintenance or fueling procedures.

Areas or procedures where potential spills can occur must have spill prevention and response procedures identified in the SWMP.

5) Dedicated Concrete or Asphalt Batch Plants. The SWMP shall clearly describe and locate all practices implemented at the site to control stormwater pollution from dedicated concrete batch plants or dedicated asphalt batch plants covered by this certification.

6) Vehicle Tracking Control. The SWMP shall clearly describe and locate all practices implemented at the site to control potential sediment discharges from vehicle tracking. Practices must be implemented for all areas of potential vehicle tracking, and can include: minimizing site access; street sweeping or scraping; tracking pads; graveled parking areas; requiring that vehicles stay on paved areas on-site; wash racks; contractor education; and/or sediment control BMPs, etc.

Permit

Part I.C.3 Stormwater Management Plan (SWMP) –

7) Waste Management and Disposal, Including Concrete Washout.

i) The SWMP shall clearly describe and locate the practices implemented at the site to control stormwater pollution from all construction site wastes (liquid and solid), including concrete washout activities.
ii) The practices used for concrete washout must ensure that these activities do not result in the contribution of pollutants associated with the washing activity to stormwater runoff.
iii) Part I.D.3.c of the permit authorizes the conditional discharge of concrete washout water to the ground. The SWMP shall clearly describe and locate the practices to be used that will ensure that no washout water from concrete washout activities is discharged from the site as surface runoff or to surface waters.

8) Groundwater and Stormwater Dewatering.

i) The SWMP shall clearly describe and locate the practices implemented at the site to control stormwater pollution from the dewatering of groundwater or stormwater from excavations, wells, etc.
ii) Part I.D.3.d of the permit authorizes the conditional discharge of construction dewatering to the ground. For any construction dewatering of groundwater not authorized under a separate CDPS discharge permit, the SWMP shall clearly describe and locate the practices to be used that will ensure that no groundwater from construction dewatering is discharged from the site as surface runoff or to surface waters.

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c. Best Management Practices (BMPs) for Stormwater Pollution Prevention

i) Selecting and locating appropriate BMPs: When selecting BMPs, consider first those that limit the source of the pollutant. It is much more efficient, from both a cost and environmental standpoint, to prevent the pollution in the first place than to clean up polluted stormwater. For example, mulching disturbed ground to reduce erosion, in most cases, is easier and more effective than trying to capture and treat sediment-laden runoff before it reaches State waters.

ii) Specific BMPs for Material Handling and Spill Prevention: Where materials can impact stormwater runoff, existing and planned practices that reduce the potential for pollution must be described. For example, materials should be stored and handled in covered areas to prevent contact with stormwater, and chemicals should be stored within berms or other secondary containment devices to prevent leaks and spills from contacting stormwater runoff. In general, spill prevention and response procedures should include the following:

- notification procedures to be used in the event of an accident. At the very least, the SWMP Administrator should be notified. Depending on the nature of the spill and the material involved, the Colorado Department of Public Health and Environment (24-hour spill reporting line – 877-518-5608), downstream water users, or other agencies may also need to be notified;
- instructions for clean-up procedures, and identification of spill kit location(s);
- provisions for absorbents to be made available for use in fuel areas, and for containers to be available for used absorbents; and
- procedures for properly washing out concrete truck chutes and other equipment in a manner and location so that the materials and wash water can not discharge from the site, and never into a storm drain system or stream.

Once source reduction BMPs have been evaluated, more costly options, such as mitigation of impacts or stormwater treatment through detention storage, must be considered as necessary. The selection of BMPs is subject to the judgment of the individual permittee, based on the conditions at the site. It is important to keep in

mind that BMPs included in the SWMP and implemented at the site must be adequately designed to provide control for all potential pollutant sources associated with construction activity to prevent pollution or degradation of State waters. Therefore, in order to comply with your permit terms and conditions, appropriate practices must be implemented in keeping with the pollutant(s) involved and the risk potential at the facility. Redundant BMP use is highly recommended to eliminate reliance on any one (or two) BMPs, and is often necessary to provide an adequate treatment train to remove pollutants in runoff.

In addition, the BMPs selected for use must be appropriately designed and implemented, following good engineering practices. It is best to base BMP design and implementation on professionally accepted references. Many well-accepted references are available that include guidance on proper BMP selection, design, and implementation. Some counties, cities, and local agencies have adopted criteria manuals for stormwater BMPs. Section D.1 of this guidance contains a discussion of additional resources for more in-depth information on stormwater quality BMPs.

BMP location

A permittee must ensure that BMPs implemented to control stormwater pollution are located prior to the stormwater discharge to a receiving water or a stormwater collection system. To meet this condition, BMPs may be implemented at any location that allows for adequate treatment of stormwater pollutants, as long as all of the following criteria are met:

- All BMPs are located:
  - prior to the stormwater leaving the control of the permittee, i.e., where the permittee is capable of ensuring the BMPs' proper operation and maintenance (see below section on Ensuring BMPs);
  - prior to discharge to a receiving water defined as Waters of the United States (see below section on Protecting Waters of the US); and
  - prior to discharge into a municipal storm sewer or other stormwater collection system not owned by the permittee (unless specific permission is granted).
- BMPs are implemented to control all pollutant sources covered by the permit certification (i.e., unmanaged pollutant sources are not located down slope from the last BMP at a site).
- BMPs are implemented in accordance with the site's SWMP.

Although it is acceptable, and often advisable when used in conjunction with redundant BMPs, to locate structural BMPs in areas of concentrated flow (e.g., check dams along drainage ditches, detention ponds, etc.), remember that removing sediment from stormwater is often not as efficient a practice as preventing erosion in the first place, and that once erosion starts, additional sediment control BMPs will almost always be necessary to prevent the discharge of sediment from the site. The most efficient construction site BMPs are those that prevent erosion from occurring.

Ensuring BMPs are under the Control of the Permittee

If a permittee will rely on contracts or agreements with other entities to manage BMPs (e.g., when BMPs will be located off of the permittee's property and implemented by a second party, such as a site developer), the guidance found in Part G.2.b of the Stormwater Fact Sheet—Construction (available from the Division's web site at www.cdphe.state.co.us/wq/PermitsUnit) must be followed to ensure the BMPs are properly addressed in the SWMP and implemented in the field. A permittee may not rely on a BMP owned or operated by a second party if the permittee does not have permission to use the BMP, and/or if they do not have any agreements in place to ensure its adequate operation and maintenance in accordance with the permittee's SWMP.

Protecting Waters of the United States

BMPs must not be located within waterways, including wetlands, that are defined as Waters of the United States, unless specifically authorized by and in compliance with a separate 404 permit (also referred to as Dredge and Fill permits) from the U.S. Army Corps of Engineers. Even when BMPs may be authorized in natural waterways, such BMPs are only intended to control pollutants originating from activities within the waterway, and additional BMPs are still necessary to prevent sediment from the remainder of the site from entering that waterway. Note that even if a drainage has been modified by a private or municipal entity, it still may be considered Waters of the United States. It is the owner and/or operator's responsibility, through consultation with the Army Corps of Engineers, to confirm the existence of any Waters of the United States at their site. More information on 404 permitting, including regional office contact information, may be obtained from the Army Corps of Engineers regulatory programs' web page at

http://www.usace.army.mil/inet/functions/cw/cecwo/reg/, or by calling the Denver Regulatory Office at (303) 979-4120.

iii) Documenting Selected BMPs in the SWMP (including phasing of BMP implementation): The SWMP must describe the specific stormwater management controls (BMPs) that will be implemented at the site to adequately control each identified pollutant source (see Section C.4.b, above). Estimated dates for BMP implementation and maintenance are required, and any existing controls must also be discussed. The plan shall identify both structural and non-structural control measures that are necessary for erosion and sediment control at the site. Thoroughly describe how the BMP used at the site will change with the different stages of construction activity at the site, and make sure that BMPs implemented for dedicated concrete or asphalt batch plants, if applicable, and vehicle tracking controls, are clearly documented.

BMP description: Level of detail
BMP descriptions provided in the SWMP must contain adequate detail to ensure proper implementation at the site. The following information must be addressed in the SWMP:

- **What** BMPs will be implemented?
- **When** will the BMPs be implemented? Many BMPs will only be implemented during specific phases of the project. For example, silt fence and detention ponds may be installed prior to grading, while inlet protection for a newly constructed stormwater collection system will need to be installed upon completion of the inlets.
- **Where** will the BMPs be implemented? The SWMP must clearly indicate the locations where BMPs will be implemented. For structural BMPs, this will usually require including the locations on the site map discussed in Section C.3 above.
- **How** will the BMPs be implemented? The installation and implementation specifications included in the SWMP must be sufficient to ensure proper implementation, including procedures for operation and maintenance of the BMP. For structural BMPs, in most cases this must include a **technical drawing**. For example, if silt fence will be used at a site, in addition to the timing and location of installation, the SWMP must provide information such as trenching depth, stake spacing, materials, etc. BMP installation and implementation criteria must follow good engineering practices. Although it is not necessary to include design calculations in the SWMP, such as those used to determine pond capacity or slope limitations for silt fence, this information may be useful to include to assist in proper revisions to the SWMP and site BMPs if and when necessary, as discussed below.

iv) Non-Stormwater Discharges: Except for emergency fire fighting activities, landscape irrigation return flow, uncontaminated springs, construction dewatering and concrete wash out water, the Stormwater Construction Permit only covers discharges composed entirely of stormwater.

Concrete Washout water can NOT be discharged to surface waters or to storm sewer systems without separate permit coverage. The discharge of Concrete Washout water to the ground, under specific conditions, may be allowed by the Stormwater Construction Permit when appropriate BMPs are implemented. Additional information on this subject is available in the Stormwater Fact Sheet – Construction, available from the Division's web site at www.cdphe.state.co.us/wq/PermitsUnit.

Construction Dewatering water can NOT be discharged to surface waters or to storm sewer systems without separate permit coverage. The discharge of Construction Dewatering water to the ground, under specific conditions, may be allowed by the Stormwater Construction Permit when appropriate BMPs are implemented. Additional information on this subject is available in the Stormwater Fact Sheet – Construction, available from the Division's web site at www.cdphe.state.co.us/wq/PermitsUnit.

Aside from the exceptions noted above, non-stormwater discharges must be addressed in a separate permit issued for that discharge. Contact the Division or visit our web page at www.cdphe.state.co.us/wq/PermitsUnit for guidance and applications.

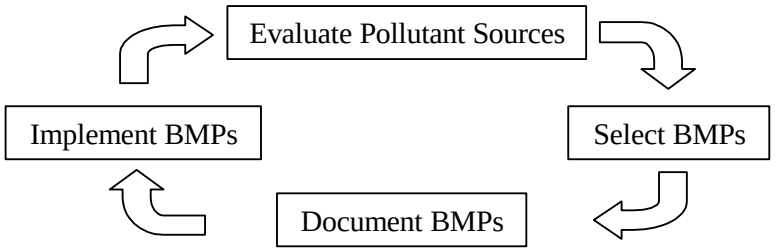
v) Stormwater Dewatering: The discharge of pumped stormwater, **only,** from excavations, ponds, depressions, etc., to surface waters, or to a municipal separate storm-sewer system (MS4) is allowed by the Stormwater Construction Permit, as long as the dewatering activity and associated BMPs are identified in the SWMP (including location of the activity), and BMPs are implemented in accordance with the SWMP.

Note: Pumping stormwater does not by itself render the pumped water a process water, provided that the pump does not contribute additional pollutants to the discharge. If, however, a sheen is visible on the water leaving the pump, a separate discharge permit is required.

d. Revising BMPs and the SWMP: At nearly every site, the implemented BMPs will have to be modified to adapt to changing site conditions, or to ensure that potential pollutants are consistently and properly managed. The pollutant sources and management practices at a site must be reviewed on an ongoing basis (and specifically during the required inspections listed in Part I.D.6 of the Stormwater Construction Permit and discussed below). When BMPs or other site conditions change, **the SWMP must be modified to accurately reflect the actual field conditions**. Examples include, but are not limited to, removal of BMPs, identification of new potential pollutant sources, addition of BMPs, modification of BMP installation and implementation criteria or maintenance procedures, and changes in items included in the site map and/or description. SWMP revisions must be made prior to changes in site conditions, except for Responsive SWMP Changes, as follows:

- SWMP revisions must be made immediately after changes are made in the field to address BMP installation and/or implementation issues; or
- SWMP revisions must be made as soon as practicable, but in no case more than 72 hours, after change(s) in BMP installation and/or implementation occur at the site that require development of materials to modify the SWMP (e.g., design of retention pond capacity)

The SWMP should be viewed as a "living document" that is continuously being reviewed and modified as part of the overall process of assessing and managing stormwater quality issues at the site. The following illustration summarizes the process of evaluating, selecting, documenting, implementing, and revising BMPs.



C.5 SWMP CONTENTS – Final Stabilization and Long-term Stormwater Management

Permit

Part I.C.4 Stormwater Management Plan (SWMP) – Contents: ***Final Stabilization and Long-term Stormwater Management***

a) The SWMP shall clearly describe the practices used to achieve final stabilization of all disturbed areas at the site, and any planned practices to control pollutants in stormwater discharges that will occur after construction operations have been completed at the site.

b) Final stabilization practices for obtaining a vegetative cover should include, as appropriate: seed mix selection and application methods; soil preparation and amendments; soil stabilization practices (e.g., crimped straw, hydro mulch or rolled erosion control products); and appropriate sediment control BMPs as needed until final stabilization is achieved; etc.

c) Final stabilization is reached when all ground surface disturbing activities at the site have been completed, and uniform vegetative cover has been established with an individual plant density of at least 70 percent of pre-disturbance levels, or equivalent permanent, physical erosion reduction methods have been employed.

The Division may, after consultation with the permittee and upon good cause, amend the final stabilization criteria in this section for specific operations.

Typically, the stormwater discharges associated with construction activity are eliminated when the site is finally stabilized. As soon as practicable after construction activities have been completed in a disturbed area, permanent stabilization should be started to prevent further erosion of soil from that area. All disturbed areas (except those portions covered by pavement or a structure) must be finally stabilized once all construction activities are completed in order to inactivate the permit coverage. Sediment that collects within the site's drainage system and permanent water quality or quantity controls is also considered unstabilized soil, and must be removed prior to the site being considered finally stabilized.

The SWMP must include a description of what measures will be taken to finally stabilize the site. The method of stabilization must be provided for all areas that will remain pervious (i.e., vegetated or landscaped instead of paved, built on, or otherwise structurally stabilized). Questions that may need to be addressed include: What type of cover will be used? What are the specific seed mixtures and application rates? Are additional BMPs needed to prevent erosion as the vegetation becomes established? Will the soil need to be amended? Will special methods be employed on any steep slopes or areas of concentrated flow?

Inactivation of permit coverage
Coverage under the Stormwater Construction Permit may be inactivated by the permittee when the site has attained final stabilization, **all temporary erosion and sediment control measures have been removed**, and all components of the SWMP are complete.

Any planned stormwater management controls to prevent or control pollution of stormwater after construction is completed must be addressed here. They typically include retention or detention ponds, infiltration measures, vegetative swales, and natural depressions.

New developments, buildings, etc., will often incorporate elements of permanent stormwater quality control into their design. The SWMP must be prepared consistent with these structural and nonstructural controls. Where possible, permanent stormwater quality controls can be constructed at the initial stages of construction, or modified at the end of construction. This can increase the efficiency of the controls by using them during both the building and operational phases of the project. When a permanent structural control is initially used as a construction BMP, the SWMP must contain the necessary information discussed in the guidance for documenting BMPs, Section C.4 above.

Use of Permanent Detention Ponds as BMPs during Construction

Permanent detention ponds are allowed to be used as a temporary construction BMP, if: a) the pond is clearly designated as a construction BMP in the SWMP; b) detention pond inspection and maintenance are described as required in Part I.B.2, Part I.C.3, and Parts I.D.6, 7, and 8 of the Stormwater Construction Permit; and c) the pond is designed and implemented for use as a BMP during construction in accordance with good engineering, hydrologic and pollution control practices. In addition, stormwater discharges from the pond must not cause or threaten to cause pollution or degradation of State waters. When a permanent detention pond is used in this manner, redundant upgradient erosion and sediment control BMPs are still necessary in almost all cases to comply with the permit requirements to select and design BMPs to prevent pollution or degradation of State waters.

The design and implementation of the pond may differ from what will exist upon completion of the project when the BMP becomes a permanent water quality feature. In this case, the description of the BMP included in the SWMP must address these differences. For example, if the outfall will be modified during construction to provide additional filtering or settling of sediment (which may or may not be necessary, depending on the existence of upstream BMPs, sediment loading to the pond, final outlet design, etc.), those modifications must be included in the SWMP. If additional temporary stabilization of the pond (e.g., at points of concentrated flow into or through the pond, unstable slopes, etc.) is needed to prevent erosion and transport of sediment from the pond during construction, this must also be addressed.

Prior to inactivation of the permit, the pond must be stabilized in accordance with the permit requirements and sediment removed from the site's drainage system. Although not related to compliance with the construction stormwater permit, the pond may need to be inspected and modified following construction in order to meet local permanent BMP design criteria.

C.6 SWMP CONTENTS – Inspection and Maintenance Procedures

Permit

Part I.C.5. Stormwater Management Plan (SWMP) – Contents: - ***Inspection and Maintenance***

Part I.D.6 of the permit includes requirements for site inspections. Part I.D.7 of the permit includes requirements for BMP maintenance. The SWMP shall clearly describe the inspection and maintenance procedures implemented at the site to maintain all erosion and sediment control practices and other protective practices identified in the SWMP, in good and effective operating condition.

a. Inspection Schedules: The minimum inspection schedule described in Part I.C.6.a of the Stormwater Construction Permit requires that a thorough inspection of the stormwater management system be performed and documented at least every 14 days, and within 24 hours of any precipitation or snowmelt event that causes surface erosion (i.e., that results in stormwater running across the ground). If more frequent inspections are required to ensure that BMPs are properly maintained and operated, the inspection schedule must be modified to meet this need.

Exceptions to the minimum inspection schedule are also provided. Any use of an exception is temporary, and does not eliminate the requirement to perform routine maintenance due to the effects of a storm event or other conditions that may impact BMP performance, including maintaining vehicle tracking controls and removing sediment from impervious areas.

Additionally, this part of the SWMP must also include maintenance procedures for the BMPs, as discussed below. You will need to set up a schedule appropriate to the activity and the BMP. Preventive maintenance should be coupled with periodic inspections.

b. Inspection Procedures: The inspection must include observation of:

- the construction site perimeter and discharge points (including discharges into a storm sewer system);
- all disturbed areas;
- areas used for material/waste storage that are exposed to precipitation;

- other areas determined to have a significant potential for stormwater pollution, such as demolition areas or concrete washout locations, or locations where vehicles enter or leave the site;
- erosion and sediment control measures identified in the SWMP; and
- any other structural BMPs that may require maintenance, such as secondary containment around fuel tanks, or the condition of spill response kits.

The inspection must determine if there is evidence of, or the potential for, pollutants entering the drainage system. BMPs should be reviewed to determine if they still meet the design and operational criteria in the SWMP, and if they continue to adequately control pollutants at the site. Any BMPs not operating in accordance with the SWMP must be addressed as soon as possible, immediately in most cases, to minimize the discharge of pollutants, and the SWMP must be updated as described in Section C.4.e, above. Inspections must be documented as discussed in the Record Keeping section, below.

c. BMP Maintenance/Replacement and Failed BMPs: The Stormwater Construction Permit requires that all erosion and sediment control practices and other protective measures identified in the SWMP be maintained in effective operating condition and in accordance with good engineering, hydrologic and pollution control practices. Therefore, site inspection procedures must address maintenance of BMPs that are found to no longer function as needed and designed, as well as preventive maintenance to proactively ensure continued operation (e.g., removing collected sediment outside the acceptable tolerances of the BMP).

A preventive maintenance program should prevent BMP breakdowns and failures by proactively maintaining or replacing BMPs and equipment. Site inspections should uncover any conditions, such as deteriorating silt fence or water collected in fuel tank secondary containment, which could result in the discharge of pollutants to storm sewers and surface waters. For example, sediment that has been collected by sediment controls, such as silt fence and inlet protection, should be removed on a regular basis, to prevent failure of BMPs, and remove the potential of that sediment from being discharged from the site if the BMP did fail. Removed sediment must be moved to an appropriate location where it will not become an additional pollutant source, and should never be placed in ditches or streams. Maintenance activities to correct problems noted during inspections must be documented as discussed in the Record Keeping section, below.

The inspection process must also include procedures to ensure that, when needed, BMPs are replaced or new BMPs added to adequately manage the pollutant sources at the site. This procedure is part of the ongoing process of revising the BMPs and the SWMP as discussed Section C.4, above, and any changes to BMPs must be recorded in the SWMP. The SWMP must be modified as appropriate as soon as practicable after such inspections.

BMPs that have failed, or have the potential to fail without maintenance or modifications, must be addressed as soon as possible, immediately in most cases, to prevent the discharge of pollutants.

d. Record Keeping and Documenting Inspections: Keeping accurate and complete records serves several functions. First, keeping records of spills, leaks, inspections, etc. is a requirement of the Stormwater Construction Permit; therefore, enforcement action, including fines, could result if records are not adequate. Second, by keeping accurate and detailed records, you will have documentation of events which could prove invaluable should complications arise concerning the permit, lawsuits, etc.

The permittee must document inspection results and maintain a record of the results for a period of 3 years following expiration or inactivation of permit coverage. These records must be made available to the Division or EPA upon request. The following items must be documented as part of the site inspections:

i) The inspection date;
ii) Name(s) and title(s) of personnel making the inspection;
iii) Location(s) of discharges of sediment or other pollutants from the site;
iv) Location(s) of BMPs that need to be maintained;
v) Location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location;
vi) Location(s) where additional BMPs are needed that were not in place at the time of inspection;
vii) Deviations from the minimum inspection schedule as provided in Section C.6.a above;
viii) Description of corrective action for items iii, iv, v, and vi, above, dates corrective action(s) taken, and measures

taken to prevent future violations, including requisite changes to the SWMP, as necessary; and

ix) After adequate corrective action(s) has been taken, or where a report does not identify any incidents requiring corrective action, the report shall contain a signed statement indicating the site is in compliance with the permit to the best of the signer's knowledge and belief.

In addition to inspection records, the permittee may opt to keep a log book for use in tracking other items related to the SWMP such as those listed below. Additional information such as dated photographs, field notebooks, drawings and maps, and the items below, etc. can also be included where appropriate.

- BMP operation and maintenance
- stormwater contamination
- contacts with suppliers
- notes on the need for and performance of preventive maintenance and other repairs
- implementation of specific items in the SWMP
- training events (given or attended)
- events involving materials handling and storage
- contacts with regulatory agencies and personnel
- notes of employee activities, contact, notifications, etc.

Records of spills, leaks, or overflows that result in the discharge of pollutants must be documented and maintained. You may also want to record other spills that are responded to, even if they do not result in a discharge of pollutants. Information that should be recorded for all occurrences includes the time and date, weather conditions, reasons for the spill, etc. Some spills may need to be reported to the Division immediately. Specifically, a release of any chemical, oil, petroleum product, sewage, etc., which may enter waters of the State of Colorado (which include surface water, ground water and dry gullies or storm sewers leading to surface water) must be reported. More guidance is available on the web at www.cdphe.state.co.us/hm/spillsandreleases.htm. The Division's toll-free 24-hour number for environmental hazards and chemical spills and releases is 1-877-518-5608.

D. ADDITIONAL SWMP AND BMP RESOURCES

There are a multitude of resources available to the construction industry to assist in complying with the requirements of the Stormwater Construction Permit. The following suggested list of resources can provide valuable tools to assist you in developing and implementing your SWMP as effectively and efficiently as possible. However, the guidance found in the resources listed below in no way replaces the requirements of the Stormwater Construction Permit, as described in Sections A through C, above. Therefore, when using the following resources, especially in the case of example plans and maps, **it is essential that you ensure that all of the requirements included in this guidance document and the Stormwater Construction Permit are being met.**

Many of the resources below require access to the internet. If you are unable to obtain any resources you need due to a lack of access to the internet, please contact the Division at (303) 692-3517 and we can try to assist you in obtaining the information you need.

D.1. RESOURCES – BMP Design and Implementation

a. **BMP Design Criteria Manuals**:
Be sure to check with the local city or county to determine if they require that specific design criteria be met. The following are some highly respected criteria manuals that can be used in designing and implementing BMPs for your site.

- **Urban Drainage and Flood Control District**
  Urban Storm Drainage Criteria Manual Volume 3 – Best Management Practices
  - This criteria manual is commonly used by cities and counties in the Denver metropolitan area. The manual includes discussion of stormwater quality management and BMPs for many activities, including construction.
    This manual is a highly respected across the country and a great resource for professionally accepted design criteria for construction BMPs.
    - Available free from the "download" section of the Urban Drainage and Flood Control District web page:
      http://www.udfcd.org/

- **Douglas County**
  Grading, Erosion, and Sediment Control (GESC) Manual
  - The criteria manual for compliance with Douglas County's GESC permitting program for stormwater quality. Includes an excellent discussion of effective stormwater management strategies, design criteria, and several very useful sample site maps.
    - Available for download free from the Douglas County Public Works web page:
      http://www.douglas.co.us/publicworks/engineering/GESC.html
    - Also available in print or CD-ROM from the Engineering Division office:
      Douglas County Public Works Department - Engineering Division
      100 Third Street
      Castle Rock, CO 80104
      Phone: 303-660-7490

b. **General BMP Selection and Design Guidance**

- **Colorado Department of Transportation**
  Erosion Control and Stormwater Quality Guide
  - Guidance on BMP selection and design applicable specifically to highway development projects, but also useful as general guidance.
    - Available online from CDOT's MS4 Program web page at:

      http://www.dot.state.co.us/environmental/envWaterQual/wqms4.asp

- **EPA Menu of BMPs**
  Construction Site Storm Water Runoff Control
  - EPA guidance for cities and counties who are required to develop programs to regulate construction activities in their jurisdiction. The BMP fact sheets provide a good discussion of various structural and nonstructural BMPs.
    - Available online at: http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm

- **International Stormwater Best Management Practices (BMP) Database**
  - Database of monitoring results showing effectiveness of structural and non-structural BMPs. Currently, the database and web site do not include much analysis of the data; this will be added in the future. Data contributions are being solicited on an ongoing basis.
    - Available online at:
      http://www.bmpdatabase.org

c. **Special Applications**

- **Burn Areas**:

  U.S. Department of Agriculture, Forest Service, 2006. Burned Area Emergency Response Treatments Catalog. 0625 1801—SDTDC.

- Available online at: http://www.fs.fed.us/eng/pubs/pdf/BAERCAT/lo_res/TOContents.pdf

- **Soil Bioengineering:**

  U.S. Department of Agriculture, Forest Service, 2000. Soil Bioengineering An Alternative for Roadside Management. 0077 1801—SDTDC.
  - Available online at: http://ttap.colostate.edu/Library/MISC/USDA%200077%201801%20SDTDC.pdf

  Franti, Thomas G. 2006. Bioengineering for Hillslope, Streambank and Lakeshore Erosion Control. University of Nebraska–Lincoln Extension.
  - Available online at: http://www.ianrpubs.unl.edu/epublic/live/g1307/build/g1307.pdf

D.2. RESOURCES – Example Management Plans

- **Construction Industry Compliance Assistance Center - Stormwater Pollution Prevention Plans**
  - A website with examples of actual stormwater plans prepared for a range of construction projects located in various states. "The purpose of presenting these documents is to demonstrate various approaches to SWPPP development. Please note that the examples presented here should not be excerpted or used as templates in the preparation of a SWPPP, since each SWPPP must be designed to handle the specific needs of a particular construction site." (Note that Colorado's plan is referred to as a 'SWMP' instead of 'SWPPP'.) Not all of the example plans will meet the requirements of the Colorado General Permit. Therefore, it is essential that this SWMP/SWPPP guidance document be used to ensure your completed plan contains all of the required elements and is appropriate for your site.
    - Available online at: http://www.cicacenter.org/swppp.html

D.3. RESOURCES – Training

- **Rocky Mountain Education Center** (Located at Red Rocks Community College, Lakewood) -
  Stormwater Management and Erosion Control Course
  - One-day course, with an optional additional half-day in the field, on the principles and practices of erosion and sediment control. Recommended for municipal erosion control inspectors and those practicing erosion control in the field. This course is required for the CDOT certified erosion control supervisor certification. Course is given at Red Rocks Community College in Lakewood. Course CETC #150.

  Stormwater Compliance Inspector Course
  - Two-day course (including half-day in the field) on preparing for and conducting a comprehensive construction site inspection. Recommended for municipal erosion control inspectors, construction site managers, and those practicing erosion control in the field. Prerequisite: Stormwater Management and Erosion Control Course (see above). Course is given at Red Rocks Community College in Lakewood. Course CETC #151.

    - Contact the Rocky Mountain Education Center at (800) 933-8394
    - Schedule of classes available online at: http://www.rrcc.edu/rmec/cetc.html

- **Keep it Clean Partnership** (Boulder)
  Erosion Control Training and Certification
  - The Keep it Clean Partnership provides a low-cost, eight-hour erosion control training and recertification program available for both public and private inspectors and contractors.
    - Contact the Keep it Clean Partnership at 303-441-1439
    - http://bcn.boulder.co.us/basin/kicp//kicp_construction.htm
- **Colorado Department of Transportation Outdoor BMP Facility** (Headquarters Office – Denver)
  BMP Filed Academy

- The Colorado Department of Transportation (CDOT) BMP Field Academy offers all day sessions with hands-on opportunities to install erosion and sediment control BMPs in the field and evaluate their performance under simulated precipitation run-off conditions. The outdoor facility includes slopes with irrigation systems and ditches fed by large water tanks, to simulate precipitation and run-off events. These training sessions are open to non-CDOT employees and industry professionals that have completed the CDOT ECS Certification training.
  - More information and registration forms: http://www.altitudeta.com/bmpacademy.htm

- **The Associated General Contractors (AGC), Colorado Chapter** (Denver)

  Uniform Stormwater Management System (USMS) Basic Stormwater Course

  - One-day course, explains the background and structure of the federal, state and local construction stormwater permitting system and requirements, defines the relationships between common construction activities, potential pollutants generated by those activities, and the controls or best management practices appropriate to control such pollutants. This Basic course is a Pre-requisite for the USMS Advanced Stormwater Manager Course.

  Uniform Stormwater Management System (USMS) Advanced Stormwater Manager Course

  - Two-day course, teaches the use of the Uniform Stormwater Management System (USMS) approach to permit compliance from preconstruction planning to permit termination. Course certification is required to qualify as a Permit Compliance Manager for participants in the Colorado Stormwater Excellence Program (CSEP). Half of the second day will be in the field. Course teaches proper documentation and inspection methodology and provides a practical, standardized step by step approach for permit compliance including all required processes and forms. Upon completion, students will have access to the AGC's on-line USMS forms and resource center.

    - Contact AGC Colorado, Ed Davis, at 303 388-2422 for information
    - Class schedule and online registration at http://www.agccolorado.org/