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STormwater Outreach for
Regional Municipalities

Only Rain in the Storm Drain

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Maricopa County Stormwater Construction Seminar 2011





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Implementation of a SWPPP Manual & Plan for Contractors

-
Site Inspections & BMP
Maintenance Requirements



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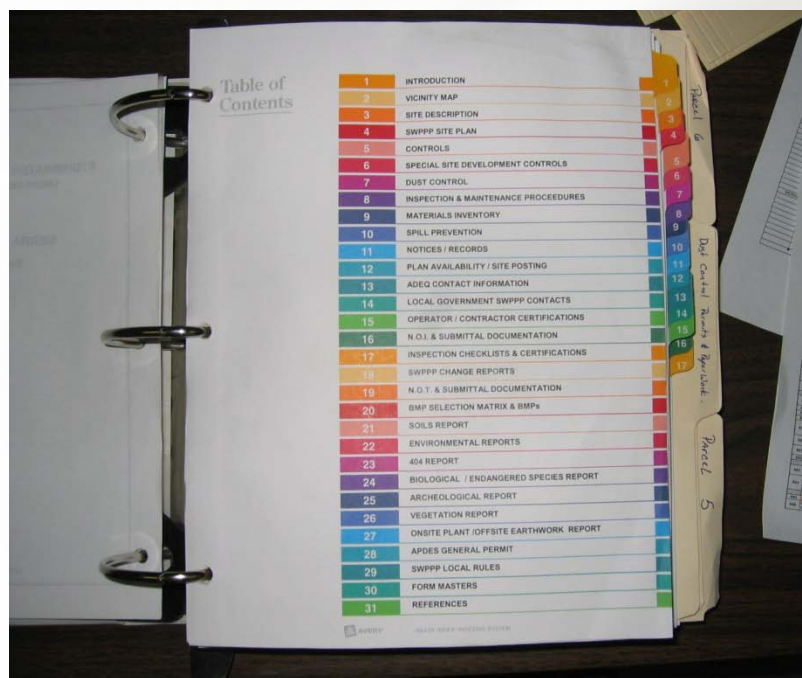
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SWPPP Manual & Plan

- SWPPP Manuals are the instructions for BMPs
- SWPPP Site Plans show where the BMPs will be used onsite.





Part IV.H. Inspections

- The Arizona Pollution Discharge Elimination System (AZPDES) Construction General Permit (AZG2008-001), Part IV.H. requires that the operator shall provide “qualified personnel” to perform inspections according to the selected inspection schedule identified in the SWPPP.





Part IV.H.1 Inspection Schedule

- Routine Inspection Schedule
 - The site will be inspected a minimum of once every 7 calendar days, OR
 - The site will be inspected a minimum of once every 14 calendar days, and also within 24 hours of the end of each rain event of 0.5 inches or greater.
 - *Note: The Department encourages adding inspections **before and/or during predicted rain events and “spot” inspections to ensure BMPs will be effective in managing stormwater runoff and associated pollutants.***



Part IV.H.1 Inspection Schedule

- Reduced Inspection Schedule
 - The operator may reduce inspection if the entire site has been temporarily stabilized; or runoff is unlikely due to winter conditions (e.g., site is covered with snow, ice, or frozen ground exists).
 - The site shall be inspected at least once every 28 calendar days, and before an anticipated rain event and within 24 hours of the end of each rain event of 0.5 inches or greater in 24 hours.



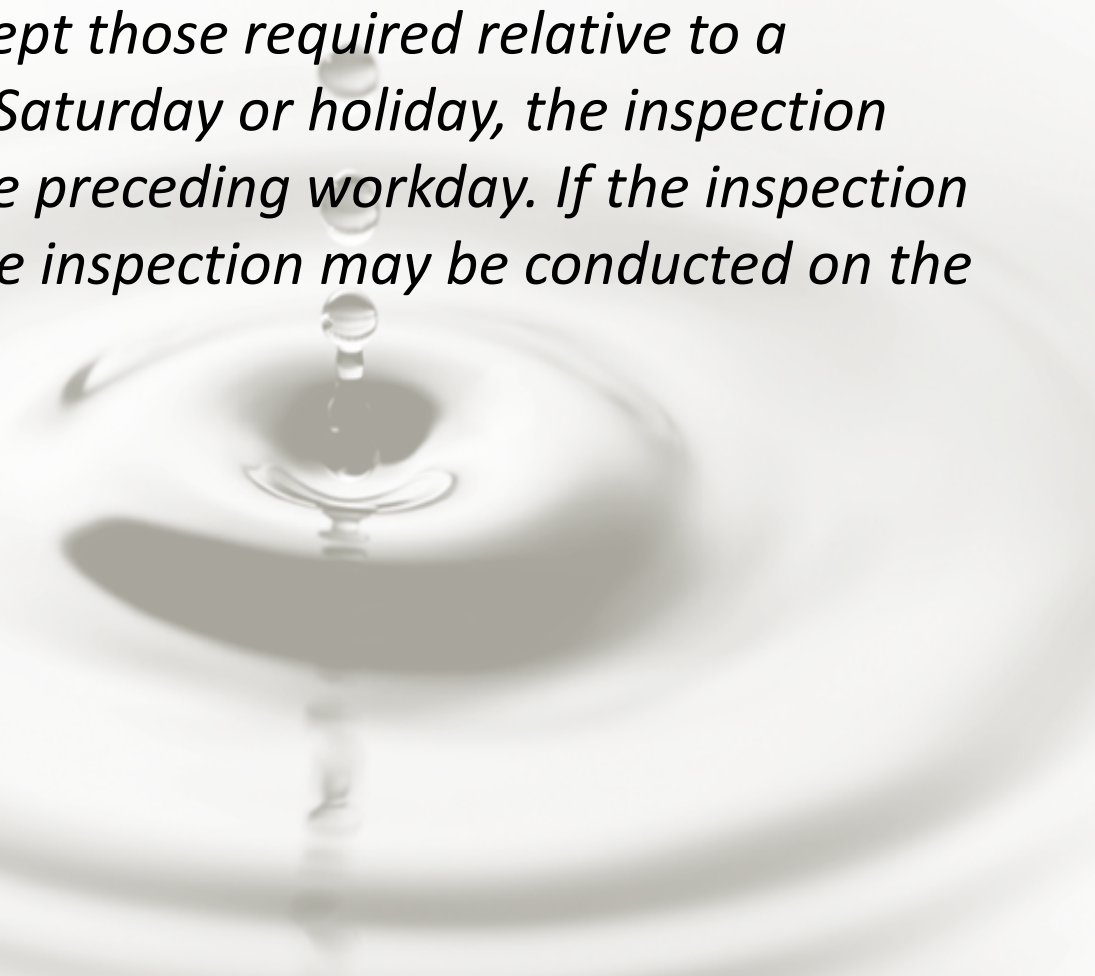
Part IV.H.1 Inspection Schedule

- Inspection Schedule for Sites within $\frac{1}{4}$ mile of Impaired or Unique Waters (Outstanding Arizona Waters – OAWs)
 - If any discharge point from the construction site is within $\frac{1}{4}$ mile of a unique or impaired water, the operator shall inspect the site at least once every 7 calendar days.
 - The operator shall visually observe stormwater discharges at all discharge locations within one business day after each rain event of 0.5 inches or greater in 24 hours.



Part IV.H.1 Inspection Schedule

- *If an inspection day (except those required relative to a rainfall event) falls on a Saturday or holiday, the inspection may be conducted on the preceding workday. If the inspection day falls on a Sunday, the inspection may be conducted on the following Monday.*





Part IV.H.2 Qualified Personnel

- “Qualified personnel” means a person (or personnel) knowledgeable in the principles and practice of erosion and sediment control BMPs, and who possesses the skills and abilities to assess conditions at the site that could impact stormwater quality and the effectiveness of the BMPs selected to control the quality of the stormwater discharges.
- The inspector(s) name, title and a description of his/her qualifications and a copy of his/her training certificate, if any, shall be included in the SWPPP before construction begins.
- Inspector information shall be updated whenever a new inspector is brought onto the project.



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Part IV.H.3 Scope of Inspections

- a. At a minimum, the inspector shall examine each of the following during each inspection:
 - i. Good housekeeping BMPS;
 - Solid Waste Storage & Pickup
 - Chemical Storage, Use, & Spill Cleanup Procedures
 - Onsite Fuel Storage & Containment
 - Vehicle Fueling & Maintenance Activities
 - POV Parking Areas
 - Sanitary Waste & Portable Job Toilets
 - Non-Chemical Materials Storage



Part IV.H.3 Scope of Inspections

- Solid Waste Storage & Pickup





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Part IV.H.3 Scope of Inspections

- Chemical Storage, Use, & Spill Cleanup Procedures





Part IV.H.3 Scope of Inspections

- Onsite Fuel Storage & Containment





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Part IV.H.3 Scope of Inspections

- Vehicle Fueling & Maintenance Activities





Part IV.H.3 Scope of Inspections

- POV Parking Areas





Part IV.H.3 Scope of Inspections

- Sanitary Waste & Portable Job Toilets





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Part IV.H.3 Scope of Inspections

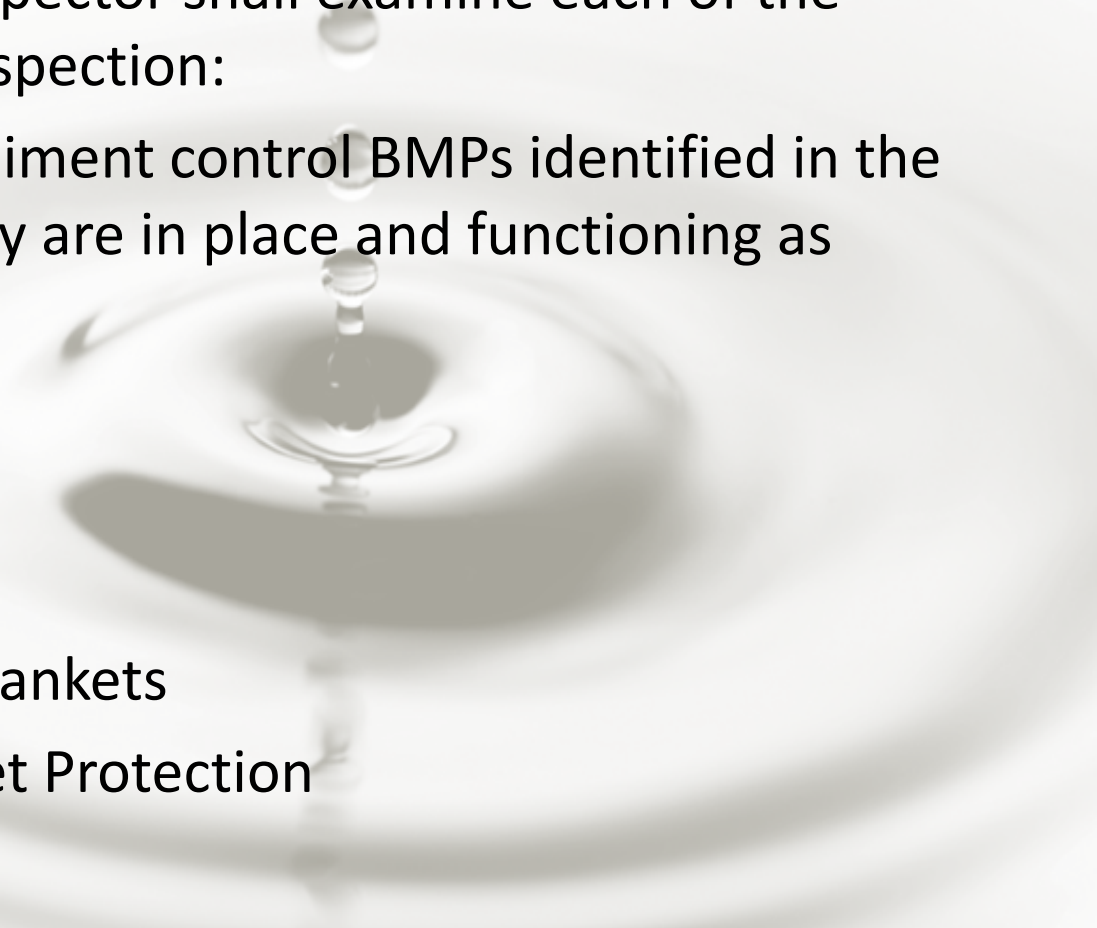
- Non-Chemical Materials Storage





Part IV.H.3 Scope of Inspections

- a. At a minimum, the inspector shall examine each of the following during each inspection:
 - ii. All erosion and sediment control BMPs identified in the SWPPP to ensure they are in place and functioning as intended;
 - Silt Fence
 - Fiber Rolls
 - Soil Stabilization
 - Erosion Control Blankets
 - Filter Fabric & Inlet Protection





Part IV.H.3 Scope of Inspections

- Silt Fence





Part IV.H.3 Scope of Inspections

- Fiber Rolls





Part IV.H.3 Scope of Inspections

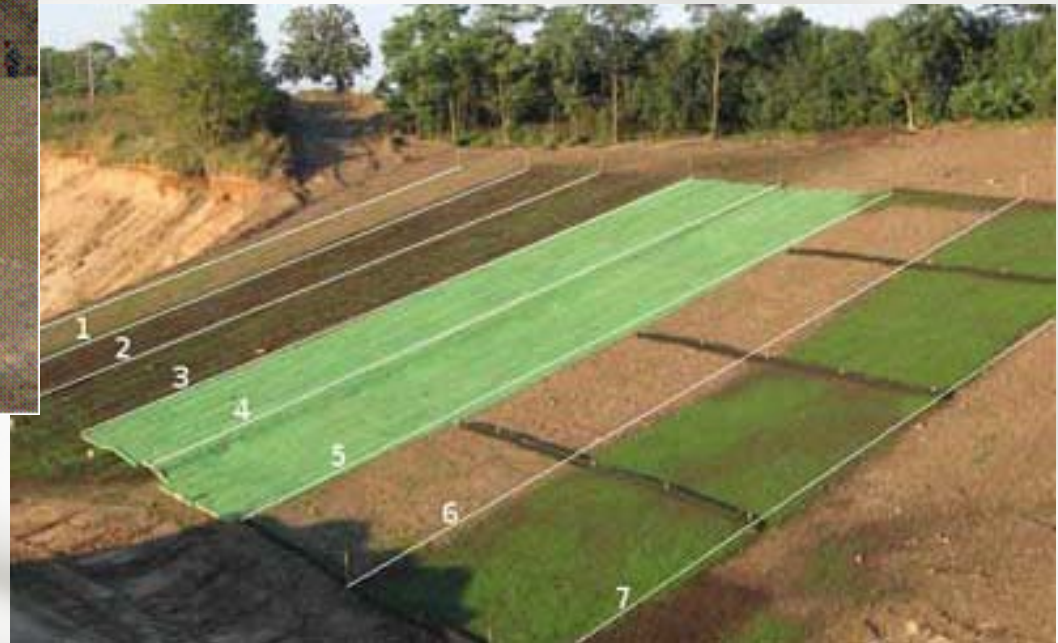
- Soil Stabilization





Part IV.H.3 Scope of Inspections

- Erosion Control Blankets





Part IV.H.3 Scope of Inspections

- Filter Fabric & Inlet Protection





Part IV.H.3 Scope of Inspections

- a. At a minimum, the inspector shall examine each of the following during each inspection:
 - iii. All areas of the site disturbed by construction activity and areas used for storage of materials that are exposed to precipitation;
 - Disturbed Soil Stabilization
 - Concrete Washout
 - Perimeter Control
 - Debris Piles
 - Materials Stockpiles



Part IV.H.3 Scope of Inspections

- Disturbed Soil Stabilization





Part IV.H.3 Scope of Inspections

- Concrete Washout



06/15/2010



Part IV.H.3 Scope of Inspections

- Perimeter Control





Part IV.H.3 Scope of Inspections

- Debris Piles





Part IV.H.3 Scope of Inspections

- Materials Stockpiles





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Part IV.H.3 Scope of Inspections

- a. At a minimum, the inspector shall examine each of the following during each inspection:
 - iv. Locations where vehicles and equipment enter or exit the site for evidence of tracking sediment, debris, and other pollutants onto and off the site;
 - Track-out Gravel Pad
 - Grizzly / Shaker Rack
 - Street Sweepers



Part IV.H.3 Scope of Inspections

- Track-out Gravel Pad





Part IV.H.3 Scope of Inspections

- Grizzly / Shaker Rack





Part IV.H.3 Scope of Inspections

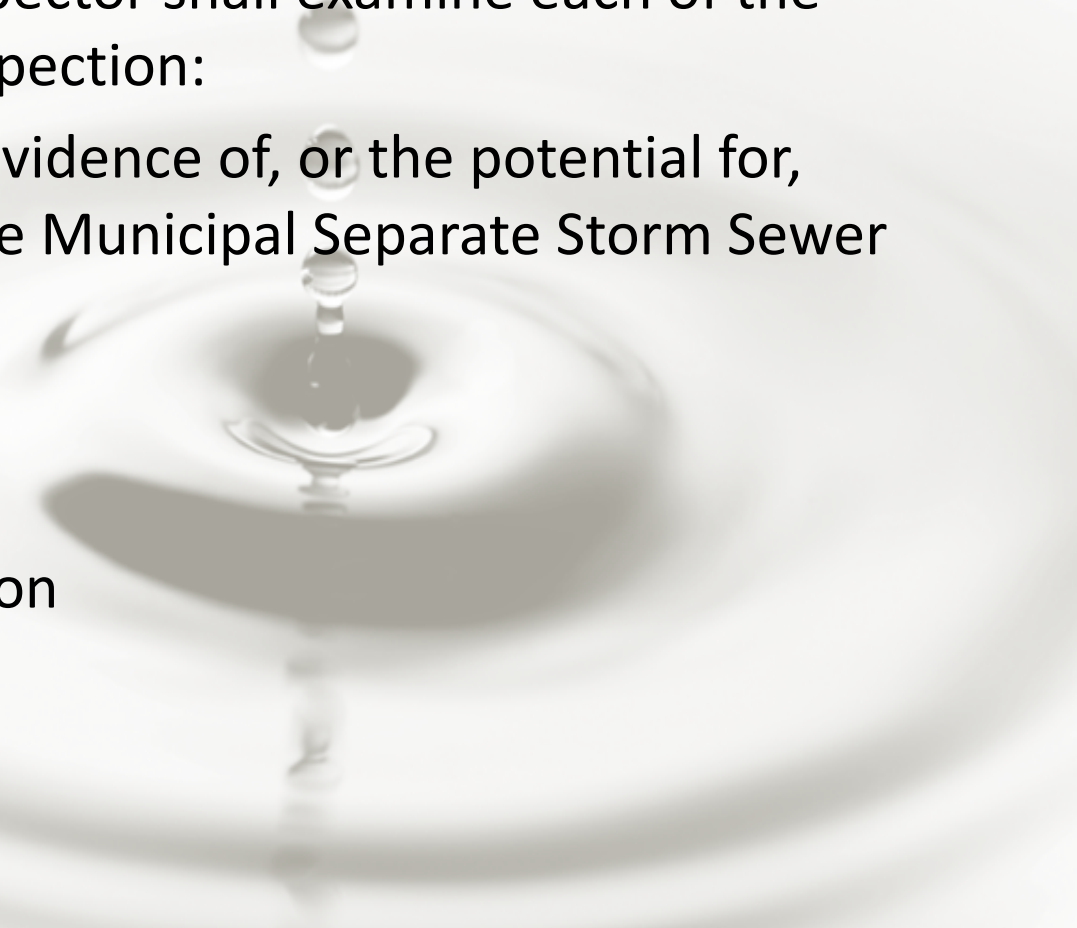
- Street Sweepers





Part IV.H.3 Scope of Inspections

- a. At a minimum, the inspector shall examine each of the following during each inspection:
 - v. Site conditions for evidence of, or the potential for, pollutants entering the Municipal Separate Storm Sewer (MS4);
 - Perimeter Control
 - Off-Site Sediment
 - Track Out Prevention





Part IV.H.3 Scope of Inspections

- Perimeter Control





Part IV.H.3 Scope of Inspections

- Off-Site Sediment





Part IV.H.3 Scope of Inspections

- Track Out Prevention





Part IV.H.3 Scope of Inspections

- a. At a minimum, the inspector shall examine each of the following during each inspection:
 - vi. Accessible discharge locations or discharge points to ascertain whether erosion and sediment control BMPs are effective in preventing significant impacts to receiving waters;
 - On-Site Storm Water Structures
 - Boundaries with Existing Improvements



Part IV.H.3 Scope of Inspections

- On-Site Storm Water Structures





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Part IV.H.3 Scope of Inspections

- Boundaries with Existing Improvements





Part IV.H.3 Scope of Inspections

- a. At a minimum, the inspector shall examine each of the following during each inspection:
 - vii. Where discharge locations are inaccessible, nearby downstream locations to the extent that the inspections are practicable;
 - Off-Site Storm Water Structures
 - Flood Control Channels
 - Retention Basins



Part IV.H.3 Scope of Inspections

- Off-Site Storm Water Structures





Part IV.H.3 Scope of Inspections

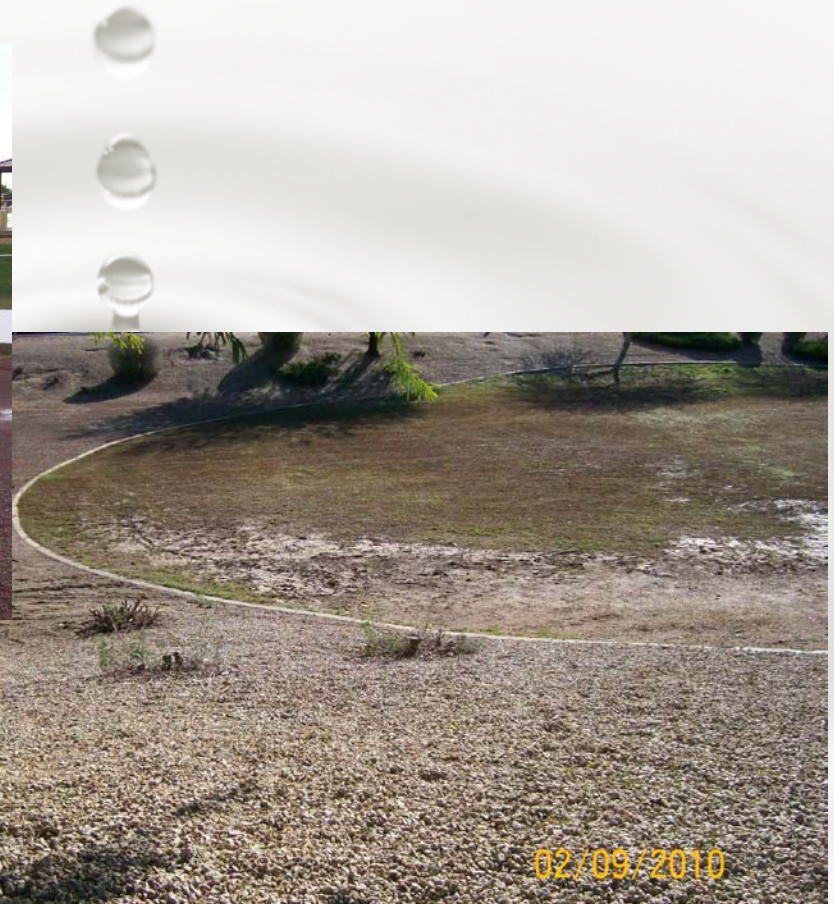
- Flood Control Channels





Part IV.H.3 Scope of Inspections

- Retention Basins





Part IV.H.3 Scope of Inspections

- b. The inspector shall document all areas inspected, the presence and effectiveness of BMPs, and the conditions found at the time of inspection.

AZCON: _____ Inspection Date: _____

Stormwater Construction Site Inspection Report

General Information			
Project Name			
Location			
AZCON number			
Date of Inspection	Start Time:	End time:	
Inspector's Name(s)			
Inspector's Title(s)			
Inspector's Qualifications (must attach to this report or indicate the portion of the SWPPP that documents the qualifications of the inspector by name)			
Describe present phase of construction			
Type of Inspection <input type="checkbox"/> Weekly <input type="checkbox"/> Bi-weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Pre-storm event <input type="checkbox"/> During storm event <input type="checkbox"/> Post-storm event			
Weather Information			
Has it rained since the last inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Weather information/Time Elapsed since last inspection:		Approximate Rainfall (in):	
Storm Start Date & Time:		Storm Duration (hrs):	
Weather at time of this inspection?			
Do you suspect that discharges may have occurred since the last inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Are there any discharges at the time of inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No			
If yes, provide location(s) and a description of stormwater discharged from the site (presence of suspended sediment, turbid water, discoloration, and/or oil sheen)			
Non-Stormwater Discharges			
Identify all non-stormwater discharges (i.e. water, other than stormwater, directed to a watercourse, storm drain, or off of the construction site):			

AZCON: _____ Inspection Date: _____

Site-specific BMPs

Number the structural and non-structural BMPs identified in your SWPPP on your site map and list them below. Include all BMPs implemented to manage erosion, sediment transport, waste disposal, material and equipment storage areas, and non-stormwater discharges. Carry a copy of this numbered site map with you during your inspections. This list will help ensure that you are inspecting all BMPs at your site. Customize this section as needed.

BMP Description and Location (indicate if associated with non-stormwater)	BMP Installed and Operating Properly?	Corrective Action Needed	Date for corrective action/responsible person	Corrective Action Implementation Date
1	<input type="checkbox"/> Yes <input type="checkbox"/> No			
2	<input type="checkbox"/> Yes <input type="checkbox"/> No			
3	<input type="checkbox"/> Yes <input type="checkbox"/> No			
4	<input type="checkbox"/> Yes <input type="checkbox"/> No			
5	<input type="checkbox"/> Yes <input type="checkbox"/> No			
6	<input type="checkbox"/> Yes <input type="checkbox"/> No			
7	<input type="checkbox"/> Yes <input type="checkbox"/> No			
8	<input type="checkbox"/> Yes <input type="checkbox"/> No			
9	<input type="checkbox"/> Yes <input type="checkbox"/> No			
10	<input type="checkbox"/> Yes <input type="checkbox"/> No			
11	<input type="checkbox"/> Yes <input type="checkbox"/> No			
12	<input type="checkbox"/> Yes <input type="checkbox"/> No			
13	<input type="checkbox"/> Yes <input type="checkbox"/> No			
14	<input type="checkbox"/> Yes <input type="checkbox"/> No			
15	<input type="checkbox"/> Yes <input type="checkbox"/> No			
16	<input type="checkbox"/> Yes <input type="checkbox"/> No			
17	<input type="checkbox"/> Yes <input type="checkbox"/> No			
18	<input type="checkbox"/> Yes <input type="checkbox"/> No			
19	<input type="checkbox"/> Yes <input type="checkbox"/> No			
20	<input type="checkbox"/> Yes <input type="checkbox"/> No			

Below are some general site issues that should be assessed during inspections. Customize this list as needed for conditions at your site.

BMP/Activity	Implemented?	Maintained?	Location/Corrective Action	Date for corrective action/responsible person	Corrective Action Implementation Date
1 Are all slopes and disturbed areas not actively being worked properly stabilized?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No			
2 Are natural resource areas (e.g., streams, wetlands, mature trees, etc.) protected with barriers or similar BMPs?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No			
3 Are perimeter controls and sediment barriers adequately installed (keyed into substrate) and maintained?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No			
4 Are discharge points and receiving waters free of sediment deposits? If no, provide locations	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No			

AZCON: _____ Inspection Date: _____

5 Are storm drain inlets properly protected?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No			
6 Is there evidence of sediment being tracked into the street?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No			
7 Is trash/litter from work areas collected and placed in covered dumpsters?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No			
8 Are washout facilities (e.g., paint, sludge, concrete) available, clearly marked, and maintained?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No			
9 Are vehicle and equipment fueling, cleaning, material storage, and maintenance areas free of spills, leaks, or any other deleterious material?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No			
10 Are materials that are potential stormwater contaminants stored inside or under cover?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No			
11 Are non-stormwater discharges (e.g., wash water, dewatering) properly controlled?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No			
12 Are there locations where additional BMPs are necessary?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No			
13 Are changes to the SWPPP necessary? (Other)	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No			
14		<input type="checkbox"/> Yes <input type="checkbox"/> No			

If there were no incidents of noncompliance noted during the inspection the inspector certifies that the construction project or site is being operated in compliance with the SWPPP and Permit No. AZG2008-001.

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

Print Inspector's Name: _____
 Signature: _____
 Date: _____



Part IV.H.3 Scope of Inspections

- c. All nonfunctional and underperforming BMPs shall be repaired, replaced, or supplemented with functional BMPs, as specified in Part IV.I.2.
 - Corrective Actions
 - Conditions requiring BMP maintenance typically **ARE NOT** violations. Depends on the circumstances.
 - Take corrective action as quickly as possible, usually within 24 hours of discovery.
 - Failure to take corrective action **IS** a violation.
 - Document corrective actions and modify SWPPP Manual and SWPPP Site Plan as necessary.



Upcoming FREE BMP Webinar

- Sponsored by Storm Water Solutions / Stormwater USA
- BMP Maintenance: Don't Get Caught With Your Fence Down!
- Tuesday, June 21st, 2011 at 11:00 AM PST (Arizona Time)
- This one-hour webinar will educate participants on the proper evaluation, maintenance and documentation of critical BMPs.
- BMPs Addressed will be:
 - Ponds
 - Silt fence
 - Inlet protection
 - Construction exits
- For more information, contact Harry Urban at hurban@sgcmail.com or 847.954.7928
- Register today at: www.estormwater.com/bmp



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Questions or Comments?

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