Pima County MS4 and the AZPDES Construction Storm Water Permitting Program

May 5, 2009
Presentation Outline

- Clean Water Act
- Storm Water Pollutants
- Pima County MS4 Permit
- AZPDES Construction General Permit
What is storm water?

- Precipitation that accumulates in natural and/or constructed storage and storm water systems during and immediately following storm events.
- Storm water runoff, snowmelt runoff and surface runoff and drainage.
Why is storm water a problem?

- As storm water travels overland and through a conveyance system, it carries pollutants to lakes, reservoirs, rivers, washes, playas, etc., and may degrade surface water quality in the receiving water.
Pollutant

- A pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological and non-Atomic Energy Commission radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.
How is storm water regulated?

Regulatory hierarchy

United States Congress –
Enacts legislation requiring regulations

United States Environmental Protection Agency (EPA) – Develops regulations

EPA or States – Permitting authority
Issues and enforces permits

Regulated Entities
Implement permit requirements
Regulatory History

- 1948 Federal Water Pollution Control Act (FWPCA) created to address pollution of interstate waters and tributaries
- United States Environmental Protection Agency (EPA) established in 1970
- 1972 FWPCA amendments referred to as the Clean Water Act (CWA) created
- NPDES
What is NPDES?

- NPDES is the *National Pollutant Discharge Elimination System* permit program.
- CWA prohibits the discharge of any pollutant to waters of the United States from a point source unless the discharge is authorized by a NPDES permit.
What is an MS4?

- Municipal Separate Storm Sewer System (MS4)
- An MS4 is a system of conveyances (e.g., storm drains, roads, curbs, man-made channels):
  - Owned or operated by a public body
  - Designed for collecting storm water
  - Not a combined sewer
  - Not a Publicly Owner Treatment Works
Is runoff from an MS4 a point source?

- The MS4 has a multitude of discharge points throughout the County. Uhhh, no?

- Yes. The 1987 Water Quality Act designated urban storm-water runoff as a point source discharge of pollutants to waters of the US.
NPDES Regulations

- 1990 EPA regulations established permit application process for Phase I sources:
  - Medium Municipal Separate Storm Sewer Systems (MS4) (serving populations $100,000 \leq 249,999$)
  - Construction sites disturbing over 5 acres
- Pima County began permit process in 1991, MS4 permit issued by the EPA in 1997
NPDES Regulations

- 1999 Phase II Final Rule – Other sources
  - Construction sites $\geq 1$ acre

- Arizona received authorization from the Environmental Protection Agency to operate the NPDES program at the state level in 2002 establishing the Arizona Pollutant Discharge Elimination System (AZPDES) Permit Program
Pima County AZPDES Storm Water Permit Area 2007

Prepared by Pima County Department of Environmental Quality

Comments:
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Why does PDEQ inspect construction sites?

Pima Count NPDES MS4 Permit, Section 5.2.2.1

Construction Site Inspections

- Visit 25% of all construction sites started within any one year that are required to submit a NOI
- Verify the existence of NOI and SWPPP
- Any review of SWPPP adequacy is incidental to inspection done for other purposes
- If PDEQ observes that the site is out of compliance, ADEQ may be notified
Construction Permit Requirements

- Develop Storm-Water Pollution Prevention Plan (SWPPP) that includes Best Management Practices (BMPs) to minimize discharge of pollutants in storm water from the site
- Submit Notice of Intent to discharge to ADEQ
- Implement SWPPP
  - Install BMPs for erosion and sediment control at site
  - Conduct inspections according to schedule in SWPPP
  - Repair and maintain BMPs
  - Maintain records
What is a SWPPP?

A document that describes site-specific controls that will be installed, implemented and maintained to control the discharge of pollutants in storm water from your construction site.
SWPPP Review

- Pima County does not review or “approve” a Storm Water Pollution Prevention Plan (SWPPP) for projects within our jurisdiction prior to construction activities.

- Why not? Pima County does not have authority to enact an ordinance that would require SWPPP submittal and approval.

- PDEQ reviews SWPPPs at construction sites.
SWPPP Preparation Considerations

- Potential onsite pollutant sources
- Where potential pollutants may discharge offsite (outfalls)
- How to control potential pollutant discharge (BMPs!)
Types of Storm Water BMPs

The three general types of storm water ground controls, or best management practices (BMPs):

- Erosion Prevention – Preventing sediment from being entrained in storm water from disturbed soil
- Sediment Control – Devices that prevent eroded sediment from leaving the site
- Materials and Waste Management Control – BMPs that control industrial type materials and waste
I. Erosion Control

- Phasing - Sequence soil disturbing activities to reduce the exposure time of bare soil
- Keep native vegetation and soil cover – clearing and grading increase soil erosion rates up to 1,000 X
- Vegetate, mulch, or otherwise stabilize all exposed areas as soon as land alterations have been completed or when site is inactive for 14 days or more
- Rough grade or terrace slopes
II. Sediment Control – Velocity Dissipation Devices

- Silt fences, straw bales, or straw waddles impede the flow of water and create a still body of water upslope of the device to allow sediment to settle out and slowly let clean water pass through the openings in the device.
II. Sediment Control – Velocity Dissipation Devices (cont.)

- Sediment basins collect runoff and allow the water to pond and sediments to settle out
II. Sediment Control: Track Out—preventing offsite sediment tracking

- Track out pad – large stones scrape sediment off tires as the vehicle rolls over them

- Wash sediment off tires at exits
III. Materials and Waste Management Control

- Good Housekeeping – Properly dispose of used construction materials and other garbage
- Use and enforce designated concrete washout areas
What I Look for During a Storm Water Inspection

- Verify that the project has obtained authorization to discharge storm water
- Review the site-specific Storm Water Pollution Prevention Plan (SWPPP) for permit compliance
- Verify that the BMPs required by the SWPPP have been implemented and maintained by conducting a site walk
Bill’s Top Ten List of Compliance Issues
10. No NOI submitted for the site
9. Site does not have a SWPPP prepared
8. SWPPP Certification page is not signed
7. Improperly installed BMPs
6. Improperly maintained BMPs
5. SWPPP is incomplete, e.g.,

- Does not identify responsible party for onsite SWPPP implementation
- Copy of permit not included
- No inspector qualifications
- No sequence of activities
- No description of interim/permanent stabilization practices
- Receiving water not identified
4. Site map is incomplete and does not show, e.g.,

- Directions of storm-water flow
- Disturbed and undisturbed areas
- Locations of BMPs
- Locations of expected stabilization practices
- Locations of storm-water discharges
3. No signage at site entrance
2. SWPPP is not updated as site conditions change during construction.
1. Regular inspections are not conducted as required by the permit
Information

- Arizona Department of Environmental Quality – AZPDES Stormwater Program:

- Pima County Department of Environmental Quality – Storm Water Program:
  http://www.deq.pima.gov/water/stwmgmprog.html