Industrial Stormwater
Ready Mixed Concrete, Crushed Stone, Sand and Gravel Sectors

United States Environmental Protection Agency
Office of Compliance
9/29/2009

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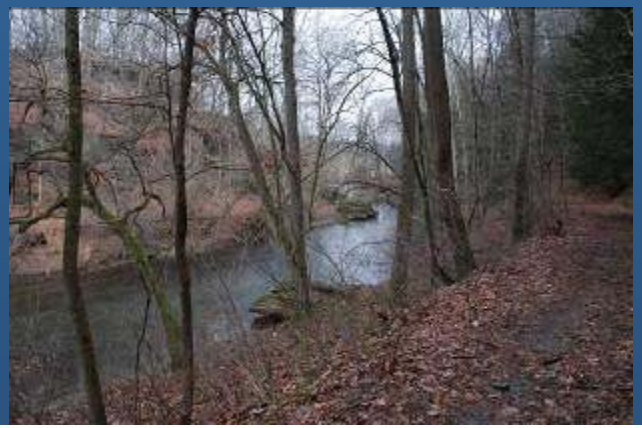
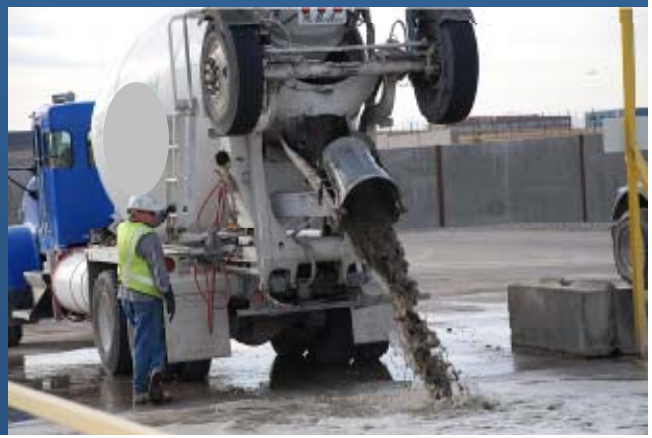
Welcome!

Webinar is in Coordination with:

- U.S. EPA – Regions
- U.S. EPA – Headquarters Offices
- Trade Associations
  - National Ready Mixed Concrete Association (NRMCA)
  - National Stone, Sand and Gravel Association (NSSGA)





Overview

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MSGP

Top-10

BMPs

1. Overview of Stormwater Impacts
2. Multi Sector General Permit – (MSGP)
3. Top 10 Common Problems Found with SWPPP's During An Inspection
4. Top Six Myths
5. Best Management Practices (BMPs)
   - Ready Mixed Concrete
   - Sand and Gravel
   - Crushed Stone

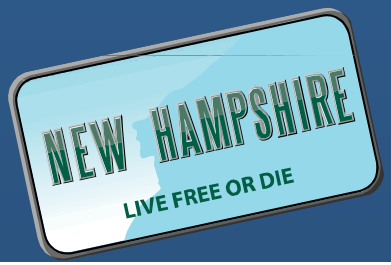
NOTICE!

Operating Under Different Permits

- The five states which are not authorized for the NPDES program fall under the federal Multi-Sector General Permit (MSGP). (Massachusetts, Idaho, New Hampshire, New Mexico, and Alaska – plus Washington, D.C., Puerto Rico, U.S. – Territories, and Indian Country Lands)

- The other 45 states have authorization and have permits that are at least as stringent as the federal regulations. We will not address the specifics of the other 45 states permits in today webinar.

- It is the responsibility of each facility to be thoroughly familiar with their individual State or Federal stormwater permit.



Examples of Differences in Permits

- State of Texas:

  - Texas has an annual numeric effluent limit for 12 metals that applies to all covered facilities (A thru AD). EPA does not.
  - Texas has an option for a general permit for Ready-Mixed plants, allowing for the discharge of both storm water and process wastewater.
- State of New Jersey:

  - Has separate permits for…
    - Concrete Products Manufacturing (CPM) (which covers ready mixed facilities)
    - Mining & Quarrying Activities (R13)
  - Basic Industrial Stormwater Permit (5G2)
  - Monitoring and other requirements in these permits are not the same as the EPA MSGP.

Why are we conducting today's training?

Ready Mix, Crushed Stone, and Sand and Gravel

- Part of EPA's Compliance and Enforcement National Priority Strategy.

To address this National Priority, we are using…

- Compliance Assistance,
  - i.e.: Today Webinar, Resources Website, etc.
- Inspections, and
- Enforcement Tools.

Purpose

- Help the owner-operators/environmental managers better understand what they need to do with environmental regulations;
- Foster better communication between EPA and regulated facilities

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   - Crushed Stone

Why is Stormwater a Problem?

- Uncontrolled stormwater runoff from industrial sites contributes to water quality impairment.
- Impervious surfaces and disturbed land contribute to changes in quality and quantity of stormwater
- Pollutants include sediments, nutrients, bacteria, chemicals, metals, etc.
- Problems include stream bed scouring, thermal pollution, siltation, fish kills, shellfish bans, etc.

Stormwater Impacts

- Responsible for:
  - beach closings,
  - swimming and fishing advisories, and
  - habitat degradation.

- Discharges from storm sewers are a primary cause of impaired water quality in the United States. These sources contribute pollutants to:
  - 13 percent of impaired rivers and streams,
  - 18 percent of impaired lakes,
  - 55 percent of impaired ocean shorelines, and
  - 32 percent of impaired estuaries.
- EPA's National Water Quality Inventory: 2000 Report, prepared under Section 305(b) of the Clean Water Act

Stormwater Impacts

- The pollutants commonly associated with concrete production -- but are not limited to —
  - Total Suspended Solids (TSS), pH, Chemical Oxygen Demand (COD), lead, iron, zinc (and possibly others)—all have deleterious effects on biota.
  - A high pH can make the waters uninhabitable for plants and aquatic life.
- Sand and gravel operations can also result in TSS/turbidity and pH pollution related problems.

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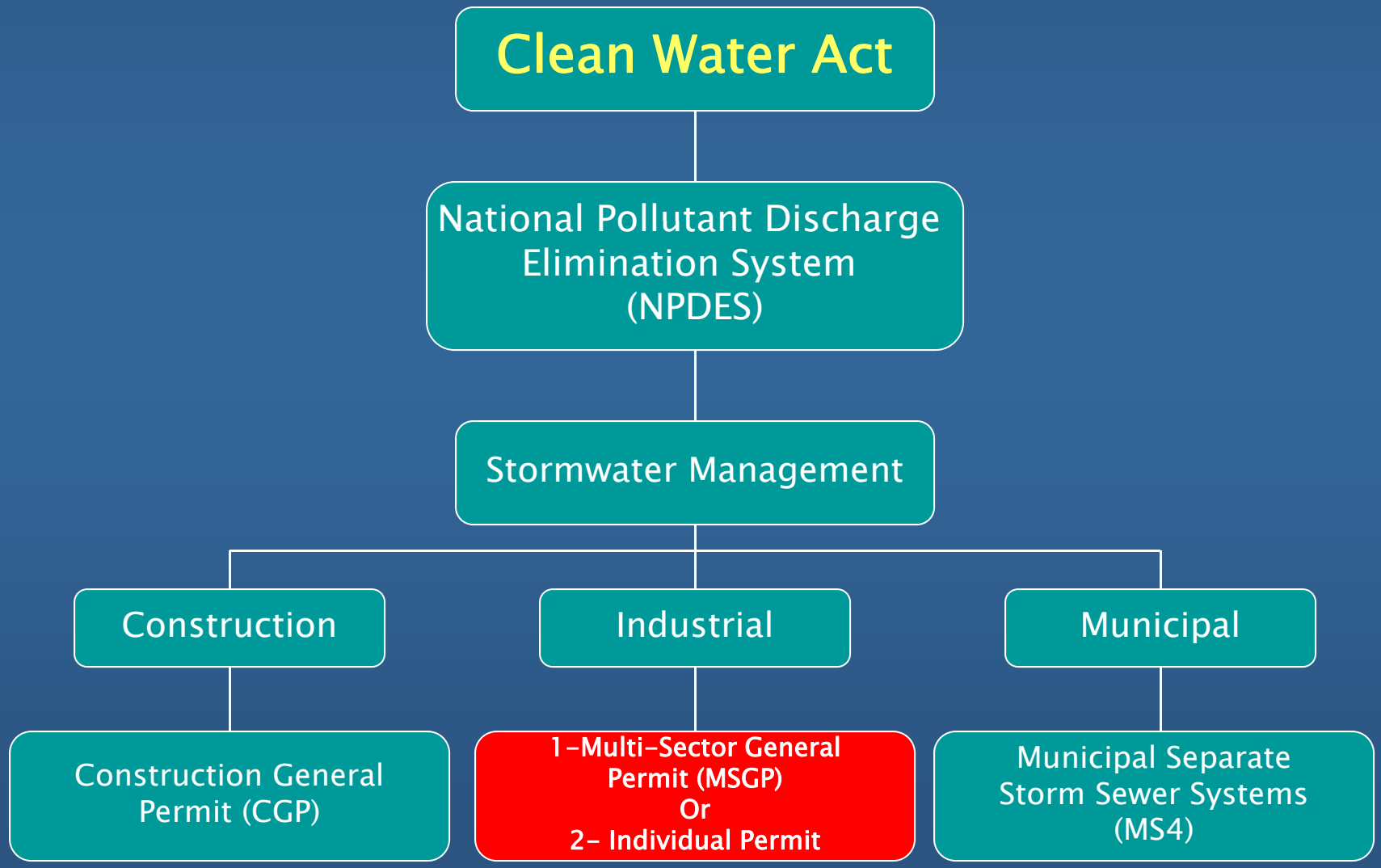
MSGP

Federal Permits for Stormwater Pollution Control



2. What is the MSGP?

MSGP

- Multi-Sector General Permit (MSGP)
  - Also known as the Industrial Stormwater General Permit
  - Covers 29 "sectors" of industrial activity
  - Applies where EPA is the permitting authority
    - In five states plus: (Massachusetts, Idaho, New Hampshire, New Mexico, and Alaska – plus Washington, D.C., Puerto Rico, U.S. – Territories, and Indian Country Lands)
    - Washington D.C., Puerto Rico, U.S. Territories, Indian Country Lands, some Federal facilities

Other 45 states may use EPA's MSGP or may implement a permit with more stringent controls.

Recommended Internet bookmark: **www.epa.gov/npdes/stormwater/msgp**

Multi-Sector General Permit Details

MSGP

- Parts 1 through 7 of the MSGP establishes general requirements that apply to all facilities *(i.e.: Coverage under this permit, Control Measures and Effluent Limits, and Corrective Actions, SWPPP, Monitoring, and Reporting and Record Keeping);*
- Industry sector-specific requirements are found in Part 8; and
- Specific requirements that apply in individual States and Indian Country Lands are found in Part 9.
- The Appendices (A through K) contain additional permit conditions that apply to all operators covered under this permit.

Note! **MSGP Permit Part Numbers are cited throughout this section (e.g., 8.J.5.1, 2.2.1 or 4.1.1)**

MSGP

29 Sectors of Industrial Activity (App. D)

A: Timber Products
B: Paper Products
C: Chemical Products
D: Asphalt/Roofing
E: Glass, Clay, Cement
F: Primary Metals
G: Metal Mining
H: Coal Mines
I: Oil and Gas
J: Mineral Mining
K: Hazardous Waste
L: Landfills
M: Auto Salvage Yards
N: Scrap Recycling
O: Steam Electric Facilities
P: Land Transportation
Q: Water Transportation
R: Ship/Boat Building, Repair
S: Air Transportation
T: Treatment Works (WWTPs)
U: Food Products
V: Textile Mills
W: Furniture and Fixtures
X: Printing, Publishing
Y: Rubber, Misc. Plastics
Z: Leather Tanning/Finishing
AA: Fabricated Metal Products
AB: Transportation Equip.
AC: Electronic, photo goods
AD: Non-classified facilities

Requirements for Ready Mix, Crushed Stone, and Sand & Gravel Sectors

MSGP

Industrial Activities Covered in…

- Sector E – Glass, Clay, Cement, Concrete, and Gypsum Products
  - Structural Clay Products
  - Concrete, Gypsum, and Plaster Products
  - Hydraulic Cement
- Sector J – Mineral Mining and Processing Facilities
  - Construction Sand and Gravel
  - Industrial Sand
  - Dimension Stone
  - Crushed and Broken Stone, Including Riprap

MSGP

2008 MSGP Overview

- Does my facility require coverage?
- What stormwater controls are required?
- What must be in the Storm Water Pollution Prevention Plan (SWPPP)?
- How do I submit a Notice Of Intent (NOI) to be covered?

Does My Facility Require Coverage under the MSGP?

Industrial facilities are required to obtain permit coverage for stormwater if they have…

MSGP

- "Primary" or "co-located" industrial activities that are covered by the permit

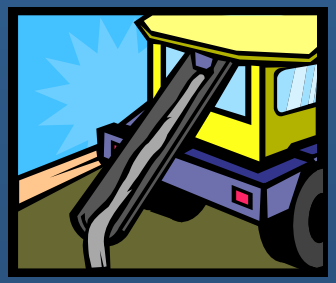
AND…

- A stormwater discharge associated with an industrial activity from the property either directly to waters of the U.S. or to a municipal separate storm sewer system (MS4)

Stormwater discharge associated with industrial activity means…

. . . the discharge from any conveyance that is used for collecting and conveying stormwater ***and*** that is directly related to manufacturing, processing, vehicle maintenance, fueling, or raw materials storage areas at an industrial plant.

Sheet flow is considered a conveyance!



Am I eligible?

Discharge areas can include…

MSGP

- Industrial plant yards
- Immediate access roads and rail lines
- Material handling sites
- Sites used for the application or disposal of process waste waters
- Sites used for the storage and maintenance of material handling equipment
- Fueling
- Roof Vents

Am I eligible?

Minimum Eligibility Requirements

MSGP

- To be eligible for EPA's MSGP, the facility must:
  - Be located in an area where EPA is the permit authority (Appendix B)
  - Have "primary" or "co-located" industrial activities that are covered by the permit (Appendix D)
  - Have stormwater discharges and/or non-stormwater discharges that are covered by the permit (1.1)

Am I eligible?

Also to be covered/eligible for the Permit…

MSGP

- Stormwater discharges do not adversely affect endangered species or related habitat (1.1.4.5)
- There are no effects on historic properties, or effects are mitigated (1.1.4.6)
- New discharges do not cause or contribute to an exceedance of a water quality standard (1.1.4.7)

Am I eligible?

Non-Stormwater Discharges that are Allowable

MSGP

- These non-stormwater discharges are eligible for coverage under the permit (1.1.3):
  - Discharges from fire-fighting activities and fire hydrant flushings
  - Potable water (including line flushings), uncontaminated ground or spring water, and uncontaminated water from foundation/footing drains
  - Incidental wind blown mist from cooling towers
  - Uncontaminated condensate
  - Irrigation drainage and landscape watering (if all related chemicals applied in accordance with labeling)
  - Pavement and building washwaters (if no detergents used and no spills/leaks of toxic or hazardous materials have occurred)

All other non-stormwater discharges must be eliminated or covered under an alternative (individual) permit !

Discharges Not Allowed are those…

MSGP

- Mixed with unauthorized non-stormwater discharges (1.1.4.1)
- Associated with construction (except for mining or oil & gas operations; and those construction areas that are under 1 acre in size).
- Authorized by a current or previous permit, unless EPA approves in writing (1.1.4.3)
- Subject to EPA effluent limitations guidelines, unless specifically listed in the permit (1.1.4.4)
- New dischargers to a water designated as Tier 3 (Outstanding Natural Resource Water) by a State or Tribe (1.1.4.8)

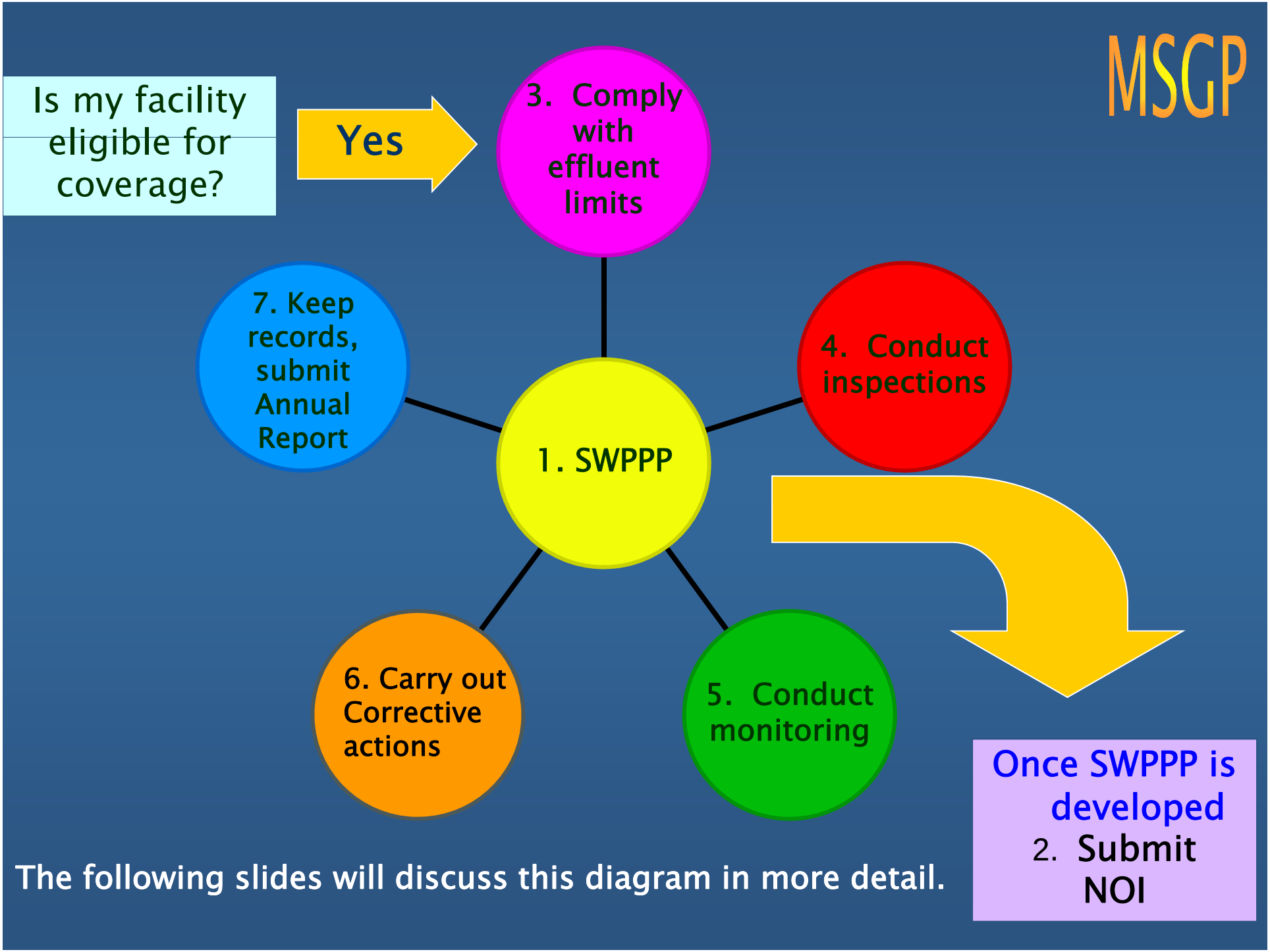
Am I eligible?

MSGP

How do I comply with the permit?

- First, determine that you are eligible for coverage under MSGP. If so, then…
- Second, identify receiving water(s) & determine its impairment/TMDL status
- Third, develop and implement a site-specific SWPPP, eliminate unauthorized non-stormwater discharges.
- Fourth, submit a Notice of Intent (NOI)
- Fifth, implement the SWPPP and all other permit requirements
- Sixth, must comply w/ all state-specific requirements (known as 401 requirements)

MSGP



The following slides will discuss this diagram in more detail.

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What Must Be In The Storm Water Pollution Prevention Plan (SWPPP)?

SWPPP

SWPPP

Development of a Storm Water Pollution Prevention Plan (SWPPP)

- All operators must develop a SWPPP *prior* to submitting NOI (5)
  - *Developing Your Stormwater Pollution Prevention Plan – A Guide for Industrial Operators*

  www.epa.gov/npdes/pubs/industrial_swppp_guide.pdf

- Existing dischargers should start from existing SWPPP, and modify accordingly to comply with 2008 MSGP

- SWPPP must address *all* 7 elements (5.1)

The SWPPP must contain…

SWPPP

- Element #1: Stormwater Pollution Prevention Team
- Element #2: Site Description
  - Activities at the Facility
  - General location map
  - Site map
  - Sector E --Ready Mixed -- (Glass, Clay, Cement) and Sector J --Sand and Gravel -- (Mineral Mining) have additional requirements
  - Receiving waters & impairment/TMDL status
- Element #3: Summary of Potential Pollutant Sources
  - Sector E and J have additional requirements
- Element #4: Description of Control Measures
- Element #5: Schedules and Procedures
- Element #6: Eligibility Under Federal Laws (e.g. Endangered Species Act and Historic Properties Preservation)
- Element #7: Signature

*Note: There may be state or tribal specific requirements under 401 certification.

Implement Your SWPPP, in which you documented how you will…

SWPPP

- Comply with effluent limits and meet benchmarks concentrations *(e.g., implement BMP's)*
- Conduct inspections
- Conduct monitoring
- Keep records and submit an Annual Report
- Carry out corrective actions
- Comply with applicable TMDL's* and WLA's** as well.

*Total Maximum Daily Load (TMDL) is the amount of a particular pollutant that a particular stream, lake, estuary or other waterbody can 'handle' without violating water quality standards.

**Waste Load Allocation: 1. The maximum load of pollutants each discharger of waste is allowed to release into a particular waterway. Discharge limits are usually required for each specific water quality criterion being, or expected to be, violated. 2. The portion of a stream's total assimilative capacity assigned to an individual discharge.

NOI Submittal Deadlines

Submit NOI

Discharger Category	NOI Submission Deadline	Discharge Authorization Date
Existing Dischargers – covered under the 2000 MSGP	No later than Jan.5, 2009 – Regions 1–9 May 27, 2009 – Region 10	30 days after EPA posts the NOI at www.epa.gov/npdes/noisearch *(unless unless the NOI is put on hold status)*
New Dischargers or New Sources – if started discharging between October 30, 2005 and Sept. 27, 2008 – Regions 1–9 Feb. 27, 2009 – Region 10	No later than Jan.5, 2009 – Regions 1–9 May 27, 2009 – Region 10	30 days after EPA posts the NOI on its website *(unless unless the NOI is put on hold status)*
New Dischargers or New Sources – start discharging after Sept. 27, 2008 – Regions 1–9 Feb. 27, 2009 – Region 10	A minimum of 60 days prior to commencing discharge, or a minimum of 30 days if the SWPPP is posted on the Internet during this period.	If the SWPPP is posted on the Internet, 30 days after EPA posts your NOI. Otherwise, 60 days after EPA posts the NOI on its website *(unless unless the NOI is put on hold status)*

Submit NOI

Endangered & Threatened Species

- Coverage under this permit is available only if your permitted stormwater discharges and discharge-related activities (note very broad definition) will not adversely affect any listed species or "critical habitat" under the (Endanger Species Act) ESA.
- Note that this is a broad definition and would include quarrying operations, exploration mine development, blasting operations, etc.
- Meet one of the Eligibility Criteria – A thru F (1.1.4.5)
- SWPPP must contain the documentation supporting your determination with regard to Part 1.1.4.5

Submit NOI

Endangered & Threatened Species

- If no documentation in SWPPP available for Endangered Species Review you are not in compliance
- You'll need to work with the U.S. Fish and Wildlife Service and appropriate state/tribal natural heritage/ agency
- See EPA's ESAs web site for more specific ESA info. http://cfpub.epa.gov/npdes/stormwater/esa.cfm

Submit NOI

Historic Properties

- Eligibility criteria modified based on the minimal opportunity for industrial stormwater discharges to affect most historic properties (1.1.4.6)
- Potential impacts to historic properties limited to subsurface disturbance that are 1 acre or less (Appendix F)

Important Contacts for NOI

Registration Questions

If you have questions regarding registration, changing your email or your account please visit CDX Frequently Asked Questions (https://cdx.epa.gov/SSL/cdx/FAQ.asp) or contact CDX using the following options:

- **Telephone**: 888-890-1995 (available M-F 8:00 am to 6:00 pm (EST)).
- **E-mail**: Send an e-mail to Technical Support at EPACDX@CSC.COM with "Technical Support" in the Subject line.
- **Fax**: 301-429-3905 (responses sent M-F 8:00 am to 6:00 pm (EST)).

eNOI System Questions

If you have questions about the eNOI system, check the website (www.epa.gov/npdes/eNOI) or contact the EPA's NOI Processing using the following options:

- **Telephone**: 866-352-7755 (available M-F 8:00 am to 5:00 pm (EST)).
- **E-mail**: Send an e-mail to Technical Support - noi@avanticorporation.com
- **Webform**: Fill out the online form at www.epa.gov/npdes/noicontact

No Exposure Certification

If you don't have machinery, equipment, materials, residuals, products, waste materials, process wastewater, particulate matter, etc. exposed outside and exposed to stormwater, then you might qualify for a "no exposure" exclusion.

Guidance Manual for Conditional Exclusion from Storm Water Permitting Based On "No Exposure" of Industrial Activities to Storm Water
June 2000

www.epa.gov/npdes/pubs/noxguide.pdf

NOTE!

To qualify for this exclusion, it must apply to the *ENTIRE* facility.

The Bottom Line

Compliance can boil down to:

- Have necessary permit
- Installing and maintaining erosion control devices (*e.g.*, silt fences, structural flow diversions & other SW controls (e.g.–filters, oil/water separators, simple roofed structures, spill containment, etc.) and other SW Controls (e.g., filters, oil water separators, etc.)
- Maintaining stormwater controls and regular inventories of onsite materials, good housekeeping, etc. (Preventative Maintenance)
- Maintaining a site specific SWPPP and having proper staff to implement the SWPPP
- Conducting quarterly samples, inspections, & maintaining reports
- Conducting annual samples, inspections, & maintaining reports
- Responding to non-compliance & documenting corrective actions
- Vigilance in house keeping & control of potential pollution
- Complying with effluent limits & benchmarks

Questions?

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MSGP

What stormwater controls are required?

Comply with effluent limits

Control Measures and Effluent Limits

Select, Design, Install & Implement Control Measures to meet…

Non-Numeric Technology-Based Effluent Limits

12 limits

Numeric Effluent Limits

Sectors with EPA Effluent Limit Guidelines (ELGs) (8 Sectors)

Water Quality-Based Numeric Limits

Compliance with permit presumed to meet WQS*

EPA may impose specific limits for a facility

Failure to Meet Required Effluent Limits is a Permit Violation

* What are Water Quality Standards (WQS)?

Basic Information: Water quality standards are the foundation of the water quality-based control program mandated by the Clean Water Act. Water Quality Standards define the goals for a waterbody by designating its uses, setting criteria to protect those uses, and establishing provisions to protect water quality from pollutants.

Comply with effluent limits

Non-Numeric Technology-Based Effluent Limits (2.1.1)

- Limit # 1: You Must Minimize Exposure
- Limit # 2: You Must Have Good Housekeeping Measures
- Limit # 3: You Must Do Maintenance
- Limit # 4: You Must Have Spill Prevention and Response
- Limit # 5: You Must Have Erosion and Sediment Control
- Limit # 6: You Must Have Runoff Management

Comply with effluent limits

Non-Numeric Technology-Based Effluent Limits (continued)

- Limit # 7: You Must Control Salt Storage Piles/Piles Containing Salt
- Limit # 8: You Must Comply with Sector-Specific Effluent Limits and Work to Meet Pollutant benchmarks
- Limit # 9: You Must Have Employee Training
- Limit # 10: You Must Eliminate Non-Stormwater Discharges
- Limit # 11: You Must Ensure That Waste, Garbage, and Floatable Debris are Not Discharged to Receiving Waters
- Limit # 12: You Must Minimize Dust Generation and Vehicle Tracking

Additional Sector-Specific Non-Numeric Technology-Based Limits

Comply with effluent limits

Requirements for Ready Mixed
(Sector E – Glass, Clay, Cement)

- Good housekeeping (8.E.2.1)

Requirements for Sand and Gravel
(Sector J – Mineral Mining)

- Limits for Clearing, Grading, and Excavation Activities
  - Management Practices (8.J.4.1)
  - Inspection of Clearing, Grading, and Excavation Activities (8.J.4.2)
  - Inspection for Cessation of Clearing, Grading, and Excavation Activities (8.J.4.2):

Comply with effluent limits

Additional Non-Numeric Technology-Based Limits

Requirements for Sand and Gravel

(Sector J – Mineral Mining)

- Employee training (8.J.5.1)
- Stormwater controls (8.J.5.2)
  - Stormwater diversions (8.J.5.2.1)
  - Capping (8.J.5.2.2)
  - Treatment (8.J.5.2.3)
- Certification of discharge testing (8.J.5.3)

Comply with effluent limits

Numeric Effluent Limits

Requirements for Ready Mixed (Sector E – Glass, Clay, Cement)

- Effluent Limitations Based on ELGs (8.E.5)
  - Discharges from material storage piles at cement manufacturing facilities
    - pH – Effluent limits: 6.0 – 9.0
    - Total Suspended Solids (TSS): 50 mg/L, daily maximum
- Refer to 2.1.3 and 6.2.2.1 of MSGP

Comply with effluent limits

Numeric Effluent Limits

Requirements for Sand and Gravel (Sector J – Mineral Mining)

- Sector J: Mineral Mining (8.J.9)
  - Mine dewatering discharges at crushed stone mining facilities
    - pH – Effluent limits: 6.0 – 9.0
  - Mine dewatering discharges at construction sand and gravel mining facilities
    - pH – Effluent limits: 6.0 – 9.0
  - Mine dewatering discharges at industrial sand mining facilities
    - pH – Effluent limits: 6.0 – 9.0
    - Total suspended solids: 25 mg/L, monthly average; 45 mg/L, daily maximum
- Refer to 2.1.3 and 6.2.2.1 of MSGP

Conduct inspections

Facilities Must Conduct Inspections

Conduct inspections

- The MSGP requires three types of inspections at all facilities:
  - Routine facility inspections (at least quarterly)
  - Quarterly visual assessments (quarterly)
  - Comprehensive site inspections (annually)
- Routine inspections and visual assessments are *not* required for "inactive and unstaffed sites" where industrial materials are not exposed to stormwater

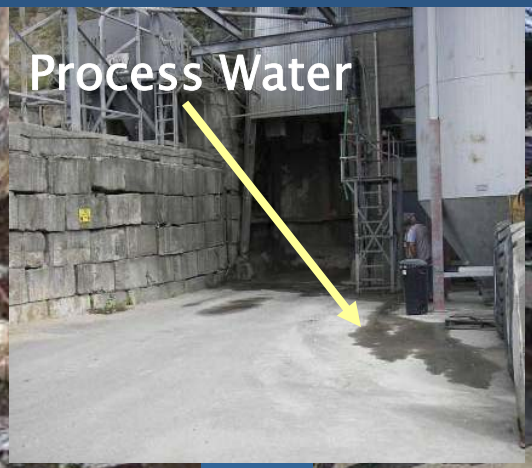
Routine Facility Inspections

Conduct inspections

- Minimum requirements (4.1.1):
  - Scope of inspection:
    - Areas of facility where industrial materials or activities are exposed to stormwater
    - All stormwater control measures used to comply with permit
  - Performed when facility is in operation
  - Performed by qualified personnel
  - Once per quarter and at least one of the inspections each year must be performed during a period when a stormwater discharge is occurring

What to look for during an inspection

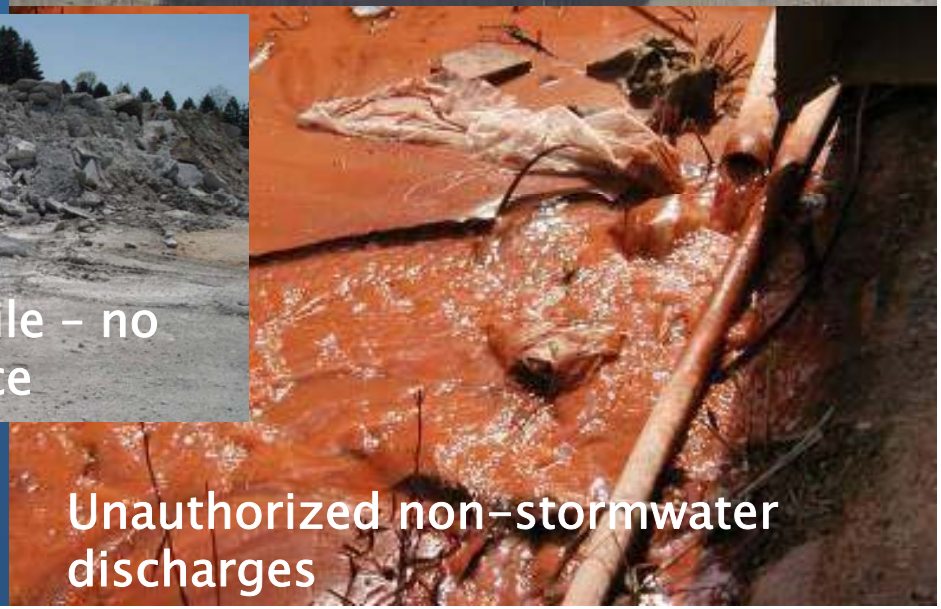
Poor Housekeeping



Exposure of potential pollutants (e.g., core batteries)

Spills or leaks

Concrete Pile – no BMP in place


Unauthorized non-stormwater discharges

Conduct inspections

Routine Facility Inspection Documentation

- Routine facility inspection documentation must include (4.1.2):
  - Inspection date, time, weather
  - Name and signature of inspector
  - Previously unidentified discharges of pollutants
  - Control measures that need maintenance, or that failed and need to be replaced
  - Incidences of noncompliance
  - Additional control measures needed

Quarterly Visual Assessments

Conduct inspections

- Once a quarter, collect a sample from each outfall for a visual assessment (within the first 30 minutes of discharge) (4.2.1)
- For storm events, the storm interval does not apply on discharges that occur less than 72 hours from the previous 72 hour discharge sampling period.
- Modified requirements for situations involving adverse weather, climates with irregular stormwater runoff, areas subject to snow
- For outfalls that are "substantially identical," only one sample is required, with outfalls assessed on a rotating basis

Conduct inspections

Quarterly Visual Assessments

- Visually inspect sample for the following (4.2.1):
  - Color
  - Odor
  - Clarity
  - Floating solids
  - Settled solids
  - Suspended solids
  - Foam
  - Oil Sheen, and
  - Other obvious indicators of stormwater pollution

Conduct inspections

Quarterly Visual Assessment Documentation

- Quarterly visual assessment documentation must include (4.2.2):
  - Sample location
  - Sample collection date/time; visual assessment date/time
  - Person collecting sample and performing assessment
  - Nature of discharge (runoff or snowmelt)
  - Results of observations
  - Probable sources of any observed contamination
  - If applicable, why impossible to sample in the first 30 minutes

Conduct inspections

Comprehensive Site Inspections

- Minimum requirements (4.3.1):
  - Conduct annually
  - Include all areas of facility affected by permit
  - Must include review of any monitoring data
  - Inspectors must examine:
    - Industrial materials that could contact stormwater
    - Leaks or spills
    - Tracking/blowing of industrial materials or sediment
    - Controls needing replacement, maintenance or repair
- Document findings (4.3.2) and submit report to EPA (7.2)

Requirements for Sector J Mineral Mining

Conduct inspections

- Additional Inspection Requirements (8.J.7)
  - Except for areas of the site subject to clearing, grading, and/or excavation activities, sites must be inspected sites *at least quarterly*
  - Sites which discharge to waters which are designated as outstanding natural resource waters (ONRW)* or waters which are impaired for sediment or nitrogen must be inspected *monthly*

* (Tier 3 Waters – For antidegradation purposes, pursuant to 40 CFR 131.12(a)(3), Tier 3 waters are identified by states as having high quality waters constituting an Outstanding Natural Resource Water (ONRW), such as waters of National Parks and State Parks, wildlife refuges, and waters of exceptional recreational or ecological significance.)

Conduct inspections

Who can conduct inspections?

- Inspections must be performed by qualified personnel with at least one member of the stormwater pollution prevention team participating

- "Qualified personnel" are those who possess the knowledge and skills to assess conditions and activities that could impact stormwater quality at your facility, and who can also evaluate the effectiveness of control measures

Conduct inspections

Who signs the reports?

- For **inspections**:
  - Name(s) and signature(s) of the inspector(s)
- For **quarterly visual assessments**:
  - Name(s) and signature(s) of the personnel performing visual assessment
- For **comprehensive site inspections**:
  - A statement, signed and certified in accordance with Appendix B, Subsection 11 of the permit and also Appendix I of the MSGP. Name(s) and title(s) of the personnel making the inspection must also be on the form
- For **SWPPPs**:
  - In accordance with Appendix B, Subsection 11 of the Permit

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Conduct monitoring

Conduct monitoring and improve SWPPP to ensure that the facility meets pollutant benchmarks and quarterly visual monitoring results are also adequate.

Conduct Monitoring and Report Your Data

Conduct monitoring

- Types of monitoring to be done:
  - Benchmark monitoring (6.2.1)
  - Effluent limitation guidelines monitoring (6.2.2)
  - State or Tribal-specific monitoring (6.2.3 and 9)
  - Impaired waters monitoring (6.2.4)

Benchmark Monitoring
Sector-Specific Requirements

Conduct monitoring

- Sector E: Glass, Clay, Cement (8.E.4)
  - Subsector E1: Clay Product Manufacturers
    - Total Aluminum – 0.75 mg/L
  - Subsector E2: Concrete & Gypsum Product Manufacturers
    - Total Suspended Solids (TSS) – 100 mg/L
    - Total Iron – 1.0 mg/L

- Sector J: Mineral Mining (8.J.8)
  - Subsector J1: Sand and Gravel Mining
    - Nitrate plus Nitrite Nitrogen – 0.68 mg/L
    - Total Suspended Solids (TSS) – 100 mg/L
  - Subsector J2: Dimension and Crushed Stone and Nonmetallic Minerals
    - Total Suspended Solids (TSS) – 100 mg/L

Conduct monitoring

Start monitoring

- Monitoring starts the calendar quarter after you get coverage for the facility

NEW! All monitoring can be submitted online, using the eNOI system to report

Helpful Resources on Monitoring

Check Training Website:

http://cfpub.epa.gov/npdes/outreach.cfm?program_id=0&otype=1

- EPA webcast on MSGP monitoring

EPA industrial stormwater monitoring guidance

- www.epa.gov/npdes/pubs/msgp_monitoring_guide.pdf

Carry out corrective actions

Carry out corrective actions

Carry Out Corrective Actions

- Refer to actions taken in response to "triggering conditions"
  - Investigation of problem
  - Documentation of problem
  - Modification to control measures
  - Compliance with deadlines and report documentation
- Summaries of corrective actions must be submitted with Annual Report (7.2)
- Two types of triggering conditions:

  (1) permit violations (3.1), and

  (2) indication of a potential problem (3.2)

  (Benchmark Exceedances)

Carry out corrective actions

Corrective Actions

- Types of Triggering Conditions
  - Permit violations (3.1) – corrective action is *required* if the discharge is found to exceed applicable water quality standards.* Examples of permit violations are:
    - Violation of numeric effluent limit
    - Unauthorized release or discharge
    - An inspection finds that control measures not properly operated and maintained
  - Indication of potential problem (3.2)
    - Significant change in facility operations changes the quantity or nature of pollutants discharged
    - Exceedance of benchmarks

* *What are Water Quality Standards?*

Basic Information: Water quality standards are the foundation of the water quality-based control program mandated by the Clean Water Act. Water Quality Standards define the goals for a waterbody by designating its uses, setting criteria to protect those uses, and establishing provisions to protect water quality from pollutants.

Keep records,
Submit
Annual
Report

Keep records, submit Annual Report

Keep Records

- Once authorized, permittees are required to keep records with the SWPPP (*don't send them to EPA!*) relating to authorization, inspections, monitoring activities, and other implementation activities (5.4)
- Records must be kept for a period of at least 3 years (7.5)
- Examples of items for records:
  - Descriptions and dates of significant spills or leaks
  - Documentation of maintenance and repairs of control measures (including when returned to full function)
  - Inspection reports
  - Description of corrective actions
  - Benchmark Exceedances & Corrective Actions

Keep records, submit Annual Report

Submit Annual Report

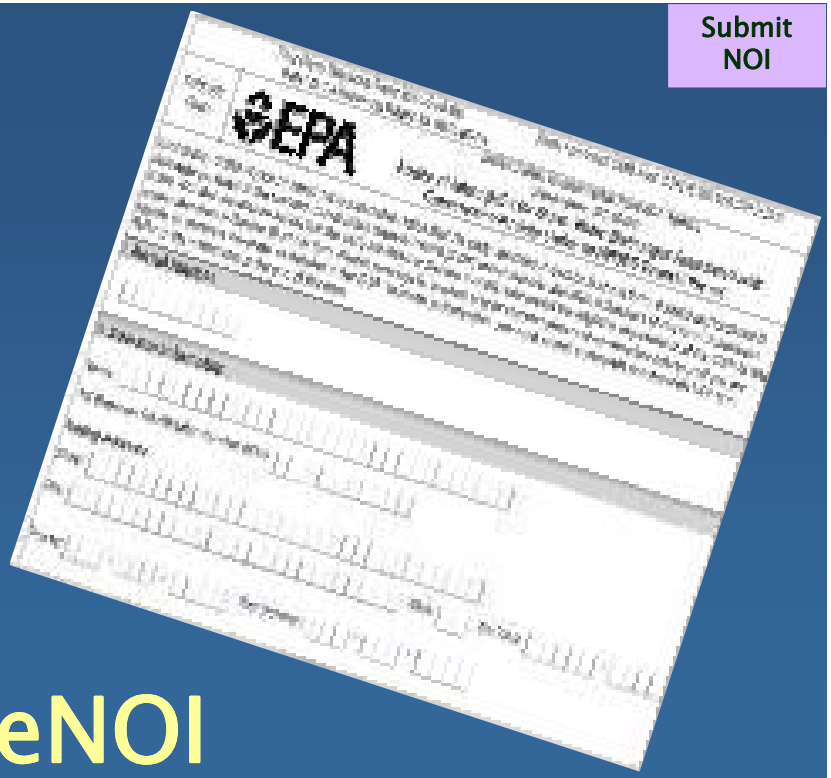
- All permittees must submit an Annual Report to EPA (7.2) must be sent:
  - Within 45 days (postmark date) after conducting the comprehensive site inspection
- Each annual report must include:
  - Findings from the facility's comprehensive site inspection (4.3)
  - Summaries of corrective actions taken during the year (3.4)
  - Report Certification (4.3.2)
- Permittees urged to use Annual Reporting form in Appendix I of the MSGP

NEW! All monitoring and reports can be submitted online, using the eNOI system to report

How do I submit a Notice of Intent (NOI) to be covered?

Submit
NOI

EPA's eNOI System



www.epa.gov/npdes/eNOI

Submit and modify…

- Notices of Intent (NOIs)
- Notices of Termination (NOTs)
- No Exposure forms (NOEs)

Questions?

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5. Best Management Practices (BMPs)
   - Ready Mixed Concrete
   - Sand and Gravel
   - Crushed Stone

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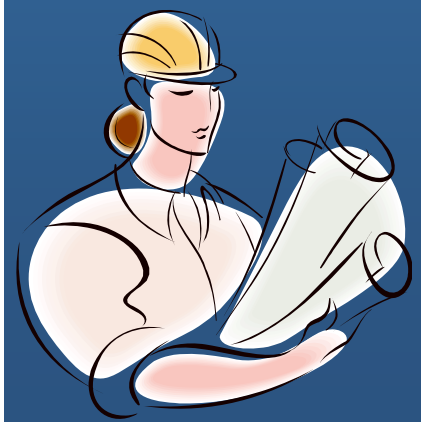
3. Top 10 Common Problems Found with SWPPP's During An Inspection
   - This list is provided to assist you in developing and maintaining an effective Stormwater Pollution Prevention Plan (SWPPP).



Top-10

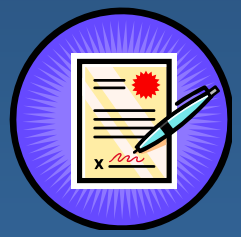
Top-10

1. **No SWPPP developed.** Some facilities do not realize that they need to develop a SWPPP, or they may copy a generic SWPPP or a SWPPP for another facility. A SWPPP is a site-specific plan and should address only your facility.

2. **Control measures described in SWPPP not used.** The SWPPP identifies stormwater control measures that are not actually being used at the site. The stormwater regulations hold you responsible for effectively implementing all control measures identified in your SWPPP. If your SWPPP has identified control measures not being used at your site, you need to edit your SWPPP accordingly to accurately reflect the measures you are in fact using.

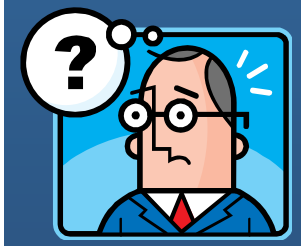
3. **No SWPPP on-site.** A copy of the SWPPP must be available on-site for review when a permitting authority or other regulatory agency inspects your site. You are responsible for maintaining a copy on-site at all times. If your SWPPP is being updated off-site, keep a marked-up copy onsite or an electronic copy until the revised SWPPP arrives.

Top-10



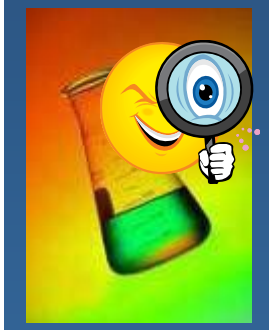
4. **SWPPP not signed.** The responsible facility representative must sign and authorize the current version of the SWPPP.

5. **Stormwater pollution prevention team not up-to-date.** The stormwater pollution prevention team identified in the SWPPP is not current. This is particularly a problem at facilities with high turnover. The facility can identify team members by title rather than by name if high turnover makes it difficult to keep a current list of names.



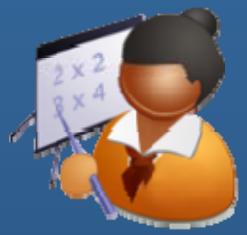
6. **On-site staff not familiar with SWPPP.** Upon arrival of an inspector, no one familiar with the stormwater program is available. A least one employee on-site must be familiar with the stormwater program and has access to the relevant files.

Top-10

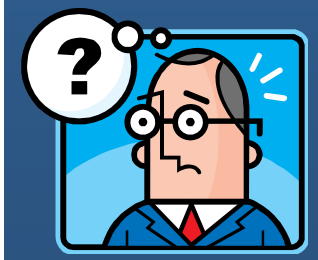


8. **Uncovered dumpsters.** Dumpsters that receive metal waste are not covered or contained. Dumpsters from contract waste collection agencies are often not appropriately sealed and can leak oils or other contaminants.

7. **Improper collection of visual assessment samples.** Visual stormwater samples are collected from pooled areas on site. Pooled areas tend to concentrate pollutants and are not representative, unless the contents of the pooled areas flow off of the facility.

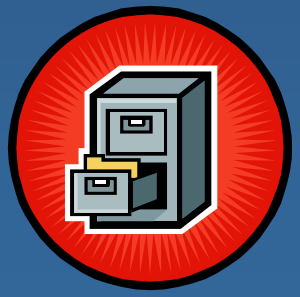


9. **Poor employee/contract staff training.** Employees or contract staff are not familiar with your stormwater management program. You are responsible for educating employees and contractors because if they release pollutants at your facility, you are responsible. If you use contractors, they should be referred to in your SWPPP and required to be trained as a part of the contract.



Keep training documentation. EPA recommends annual training (or more frequent) MSGP 2.1.2.9. Annual training required by for Sand and Gravel (Sector J) (8.J.5.1).

Top-10



10. Inspection or monitoring records are not kept with the SWPPP.

Records of routine site inspections, visual assessments, or monitoring results should be available with the SWPPP for review. All records on implementation of practices required in the permit must be kept with the SWPPP (see Section 6.C for more information).

SWPPP Tip

SWPPP Availability – Keep a copy of the current, signed and certified SWPPP at your facility, and make it available to EPA, State, local agency or other regulatory agency staff at the time of an onsite inspection. The SWPPP should also be available to facility staff, and should be readily referred to during regular facility operations to ensure that all activities are implemented as described in the SWPPP.

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Myth #6

- **Myth**: "I submitted a SWPPP to the State, and no one said there was a problem, so I'm in compliance."

- **Fact**: It is your responsibility to ensure that your SWPPP contains all items required by the Permit. The SWPPP must be modified when the permit requires.

Myth #5

- **Myth**: "There is no guidance on how to develop a site-specific SWPPP."
- **Fact**: There are resources on SWPPPs and all other elements of the stormwater program.

Developing Your Stormwater Pollution Prevention Plan – A Guide for Industrial Operators – February 2009
www.epa.gov/npdes/pubs/industrial_swppp_guide.pdf

Myth #4

- **Myth**: "I'm all set because the 'local guy' has done 'inspections' of the site."

- **Fact**: It is the responsibility of the owner/operator of the site to conduct inspections to verify compliance.

Myth #3

- **Myth**: "I've inspected the site and am in compliance, even though I don't have records of those inspections on site."

- **Fact**: The permit requires the operator to conduct inspections and *maintain records* of those inspections.

Myth #2

- **Myth**: "EPA never told me there was a problem at my site, so I'm in compliance."

- **Fact**: If you discharge without a permit and/or violate the terms of a permit, you have violated the Clean Water Act.

Myth #1

- **Myth**: "I fixed the problem after the inspection, so I did not violate the Clean Water Act."

- **Fact**: If you discharge without a permit and/or violate the terms of a permit, you have violated the Clean Water Act.

  However, the sooner you fix the violation, the less days of violations you will have, and that may reduce your liability.

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5. Best Management Practices (BMPs)

BMPs

Typical pollutants associated with Ready Mix, Sand and Gravel and/or Crushed Stone.

- Total Dissolved Solids (TDS)
- High pH – from exposed material
- Heavy Metals – pollutants such as zinc, copper, chromium, lead and zinc
- Total Suspended Solids (TSS)/Turbidity – pollutants such as sand, silt and clay
- Fugitive Dust
- Oil & Grease – includes motor oil, diesel fuel, hydraulic fluid and other industrial lubricants
- Degreasers and Solvents
- Temperature – warm runoff from impoundments and impervious surfaces
- Surfactants – Detergents
- BOD and COD (Biochemical and Chemical Oxygen Demand)
- Nitrate-Nitrite (Sand and Gravel benchmark)

Best Management Practices (BMPs)

- Practices, structures, vegetation, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the United States.
- BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Inspection Guidance

Identify sources of <u>process water</u> being generated from industrial operations, (which may contain high TSS, TDS, metals oil and grease, high pH, and/or other pollutants). Examples include:

- Water used during sand/gravel washing
- Water from the concrete mixing area (which comes into contact with concrete materials)
- Water used to wash down the exterior of, or wash out the interior of, concrete drum/delivery trucks
- Discharge from mine or quarry de-watering
- Vehicle Maintenance and Fueling

Inspection Guidance

(Track Process Waters)

- Determine the fate of industrial process water:
  - Does it co-mingle with stormwater?
  - Does the facility have an individual permit for any of their process water discharges?
  - Does the facility have a wastewater treatment system?
  - Does it get directed to settling basins, ponds, pits, etc.?
  - Is it recycled and reused in operations?
  - Does it flow into building or garage floor drains, or nearby storm drains?
  - Does it get collected and piped to an outfall?
  - Does it have the potential to run-off into nearby streams, wetlands, etc.?

General Inspection Guidance

- Run-on
  - Divert clean stormwater (runon) from process areas such as material storage piles, maintenance shops, washout basins, etc.
- Material Storage Piles
  - Ensure adquate BMPs to prevent runoff of sediment and other pollutants. Materials Storage Areas
  - Where are stockpiles of materials situated? (Ensure adequate buffer between pile and stormwater conveyances and flooding.
- Truck Washing
  - Washwater is not stormwater and must be sent to a sanitary sewer (if authorized), discharged under an individual permit, recycled/not discharged.
- Maintenance (Vehicles/Machinery)
  - Do maintenance activities in a roofed area.
  - Use non hazardous parts cleaners.
  - Store lubricants, hydraulic oils, fuel and other fluids in a manner that prevents spills and stormwater pollution.

Ready Mixed Concrete Facilities: *Inspection Guidance*

- <u>Concrete Truck Wash Out</u>
  - Wash water should be captured/directed into settling pits or basins – ensure adequate freeboard so there is no discharge during storm events.

Sand and Gravel/Crushed Stone Inspection Guidance

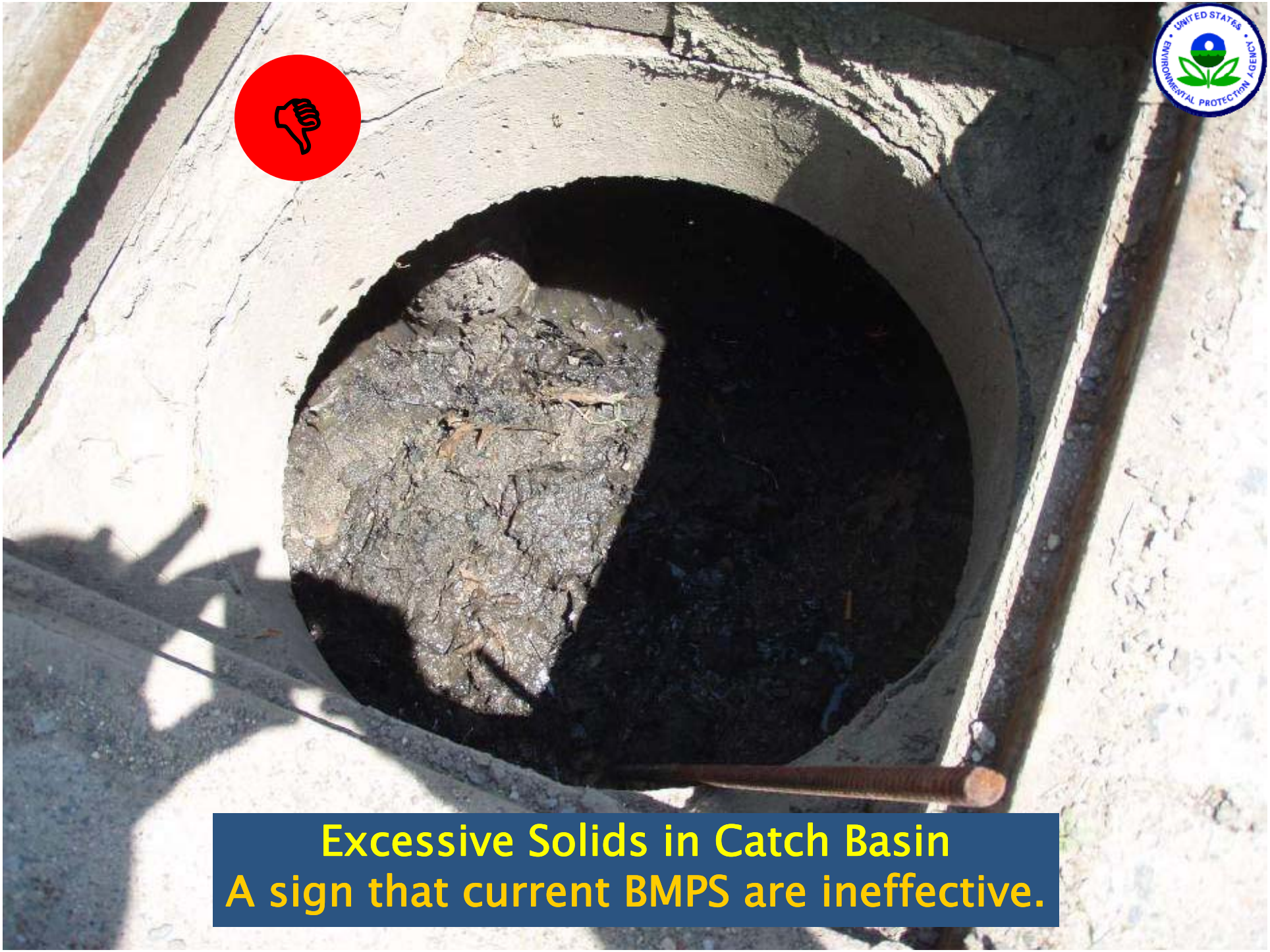
- Sand/Gravel/Stone Process Wash Area
  - No discharge without an individual permit
  - Complete containment and/or reuse of process wastewater
- Check for potential process wastewater run-off
  - Check site containment capabilities including berms, ponds, drainage ways, embankments, etc.
- Evaluate water reuse and recycling programs "water mass balance"

Observations from Actual Inspections

- Discharges of truck wash down water with high turbidity and pH ($\geq$ 10) into nearby wetlands.
- Large sand stockpile stored directly next to a river, with little to no erosion control.
- Floor drains in a concrete mixing bay being piped to an outfall discharging into a wetland stream.
- Concrete wash out pits/basins filled with solids, creating the potential for overflow and insufficient capacity during rain events.
- No MSGP coverage, no benchmark or visual monitoring, no SWPPP, minimal to no best management practices (BMPs).
- Facilities with aboveground oil storage > 1,320 gal. without an spill prevention, control, and countermeasure (SPCC) plan.
- Hidden drains & drain lines at process wastewater pits.

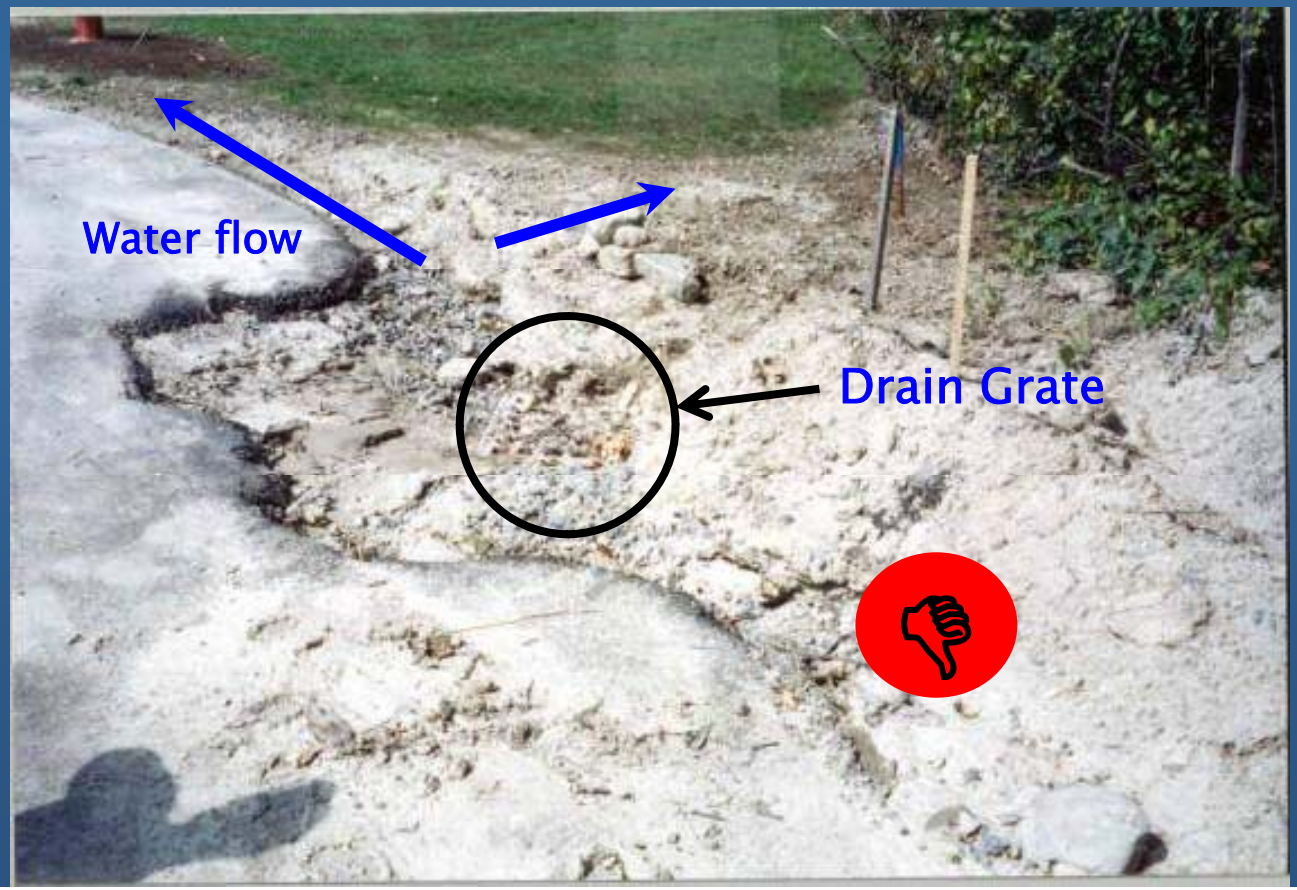
Inlet Protection

Filter Fabric, Filter Rolls, Block and Gravel Protection



Excessive Solids in Catch Basin
A sign that current BMPS are ineffective.

Housekeeping and Maintenance – regular sweeping – drain not protected



Fueling, Secondary Containment and Drain Valves

Secondary Containment Drain Pipe is Open, and no Valve. Drain valves should be kept closed and locked out.

Diesel Fuel Line for Concrete and Aggregate Trucks

(Line is failing and is lying on ground)

Secondary Containment
store in a covered location

Good: In Shed and Covered and No Exposure

Drums not in roofed area and without secondary containment.

Industrial Areas and Activities to Inspect

- Storage Areas

Ready Mixed Concrete Facilities:

Observations from Actual Inspections

Chemical/Fuel Storage and Leaks

Drums stored on totes to capture leaks and under a roof.

Oil/Grease Trap in Catch Basin

Not being serviced or maintained, separator filled with sediment, oil and debris.

Trench Drain in Vehicle Service Garage

1. Not being serviced/cleaned,
2. Discharges off site or to Surface Waters,
3. Receives process wastewater from Truck washing operations,
4. Chemicals stored, & transferred in area of drain – no secondary containment/spill kits.

Poor or Non Existent BMP --
Process Water and Sediment run off site

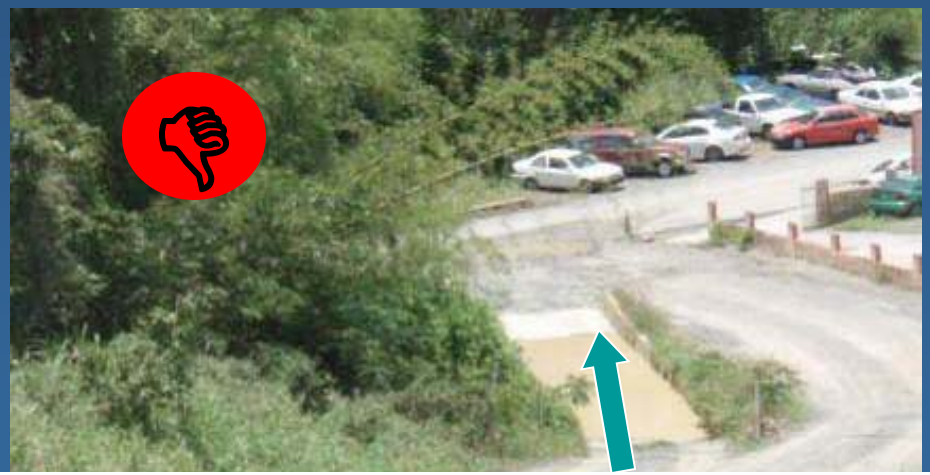
Stormwater Detention Pond/Sediment Basin

- Not stabilized or designed properly.
- No vegetation.
- Solids passing through pond to surface waters.

Site Entrances/Exits and Storm Inlets

Wheel wash system

http://www.ajspecialists.com/wheel_wash/wheel_wash3.jpg



Improperly designed wheel wash for trucks exiting site, turbid water from wheel wash would overflow and flow down into stream <100' away

Storm Drain adjacent to Access Road to Plant

- No storm drain protection

Rock stabilized construction entrance.

Drainage Trench Off Site or to Surface Waters
(Properly Stabilized using Geotextile Material)

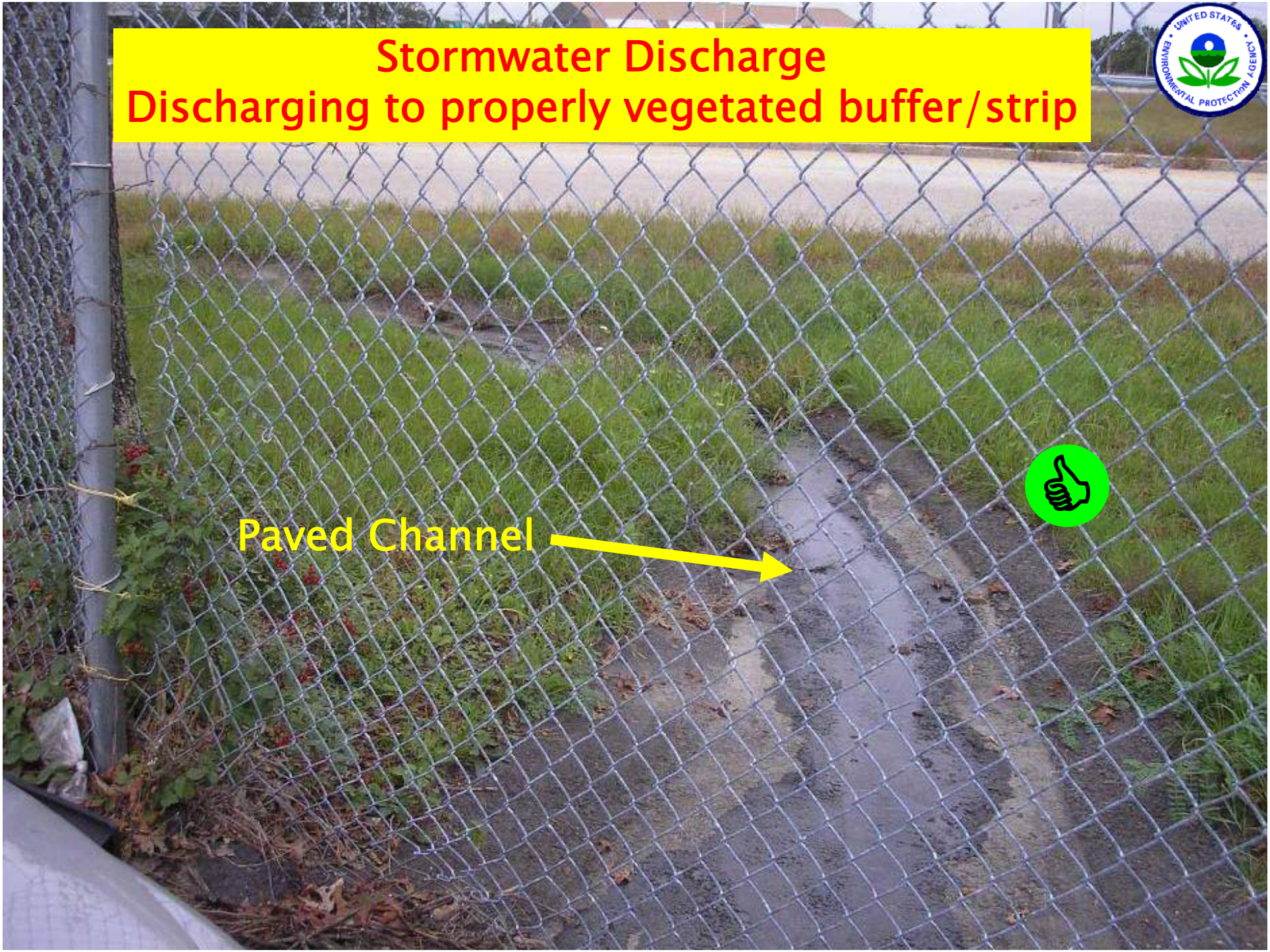
Potential problem, depending on flow rates in the channel during storm events, hay bales can be washed away, perhaps gabions or rock check dams needed.

Also may require wetlands permit.

Sediment basin created using gabions

Sediment Basins for capturing sediment and Geotextile material for stabilization of soil and fostering vegetation.

Geotextiles and sediment basin installed at Ready Mix/Asphalt facility. Also used to divert stormwater from process areas.


Stormwater Discharge
Discharging to properly vegetated buffer/strip
Paved Channel

Rain Gage
(Good to Have)

<u>Suggested</u> – Tool to help operator understand how facility conducts compliance monitoring.

However, the gage should be placed away from buildings, trees, power lines and other obstructions to ensure accurate readings.

Questions?

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Level Spreader
&
Rip Rap Slope Protection w/Check Dams
(Good)

Ready Mixed Concrete Facilities:
Observations from Actual Inspections

Determine where concrete trucks are washed down and washed out. Are best management practices employed?

Left: Turbid, high pH (corrosive) rinse water was discharging to surface waters

Right: Rinse water was being collected in a settling basin, can not discharge washwaters under MSGP.

Ready Mixed Concrete Facilities:

Observations from Actual Inspections

Ready Mixed Concrete Facilities:

Observations from Actual Inspections

Problems in…

- Loading areas
- Wash in/out areas

Observations from Actual Inspections

Stockpile on the bank of a river, with unmaintained and/or inadequate BMPs.

Stockpile must be set back from watercourse to avoid material from pile washing into watercourse as well as flooding.

Ready Mixed Concrete Facilities:

Observations from Actual Inspections

Improper Washout at Jobsite or Facility

Ready Mixed Concrete Facilities:

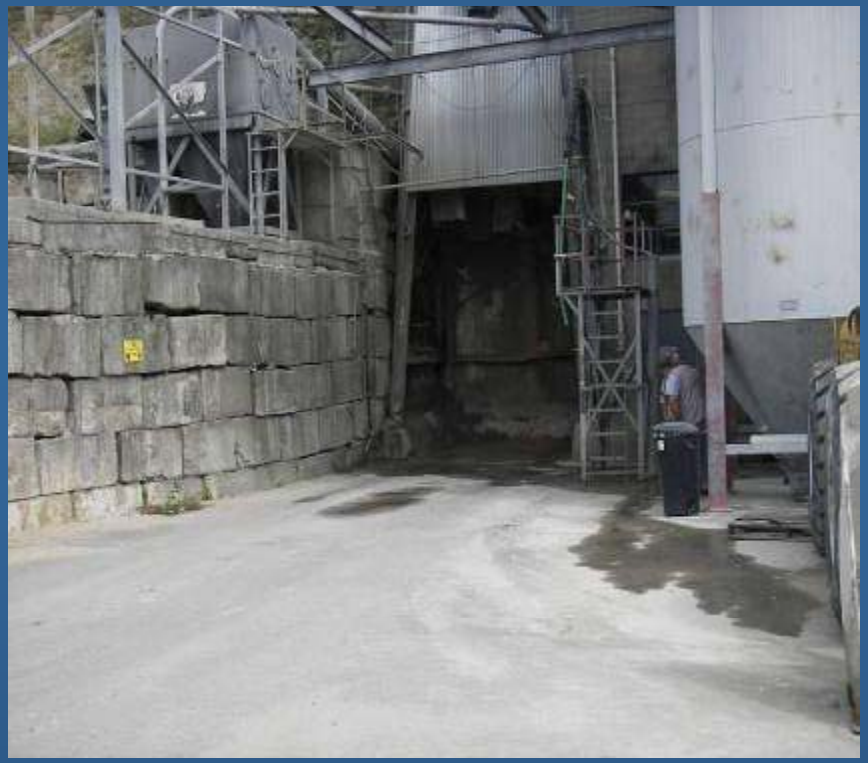
Observations from Actual Inspections

Concrete Washout –

To prevent leaks on the jobsite, ensure that prefabricated and self fabricated washout containers are watertight.

Ready Mixed Concrete Facilities:

Observations from Actual Inspections



Be Aware -- examples of concrete mixing and drum truck loading bays. Determine the path of run-off from these areas.

Observations from Actual Inspections

Poor Housekeeping

Observations from Actual Inspections

Floor drain in concrete mixing bay connected to an outfall pipe, (a non-permitted discharge of process water, high in pH (corrosive), & solids.

Ready Mixed Concrete Facilities:

Observations from Actual Inspections

Improper Management Waste Concrete

- Returned
- Crushed
- Washout sludge

Ready Mixed Concrete Facilities:

Observations from Actual Inspections

Poor Structural BMPs

- Selection
- Maintenance

^ -- Settling Pond - not functioning -- solid & sediment running through.

< -- BMP Control not limiting Sediment

Ready Mixed Concrete Facilities:

Observations from Actual Inspections

NO BMPs

Ready Mixed Concrete Facilities:

Observations from Actual Inspections

Poorly Maintained & Improperly Installed Silt Fences

Concrete Truck Washout Out Area

Concrete Washout Wastewaters are not authorized to discharge under the MSGP.

Additionally, check with your Underground Injection Control (UIC) program and/or state/commonwealth/tribal government whether unlined or lined ponds are regulated. Note that some state NPDES programs also regulate discharges to groundwater.

Observations from Actual Inspections

Fuel & Oil Spills

Spill containment and clean up materials

Drip Pans

Spill Kit (Sorbent Materials)

Observations from Actual Inspections

Waste Storage Locations Not Identified on the SWPPP

Co-Located: Asphalt Operations w/Aggregate Operation Process Waters from Aggregate Wash is being Recycled back to Process Pond.

(Pond fully stabilized w/vegetated buffer)

Recirculation washwater pond at sand and gravel facility

Quarry Water & SW Settling Pond
(Excess Freeboard/Capacity)

Improper Management of Vehicle Parking/Washing Operation

(Off Site Discharges and Discharges to Surface Waters – Not Contained)

Proper Management
Access Road to Aggregate Plant

Quarry Water & Stormwater Settling Pond

(Non-process Waters Pumped to Swirl Separator Prior to Discharge)

Discharge Subject to Numeric Limitations

Stormwater Detention Pond w/Rip Rap Walls, Outlet and Velocity Dissipation Control

SW Detention Pond

w/Proper Capacity and Detention
(For Aggregate Crushing Operation and Concrete Mfg Operation)

Waste Concrete Stockpile

No Perimeter Controls & Located Adjacent to Surface Waters

Questions?

Federal & State Stormwater Resources

- **Additional Compliance Assistance resources are available on a dedicated website for your industry at:**

www.epa.gov/compliance/assistance/sectors/readymix-aggregate.html

- **Webinar will be recorded and placed on line for others in your industry to view and listen to anytime at above site.**

- **EPA MSGP Web Page:**
  http://cfpub.epa.gov/npdes/stormwater/msgp.cfm#msgp2008_swppp

- **2008 Multi-Sector General Permit**
  http://cfpub.epa.gov/npdes/stormwater/msgp.cfm
  http://www.epa.gov/npdes/pubs/msgp2008_finalpermit.pdf

- **Authorization Status for EPA's Stormwater Construction and Industrial Programs**
  http://cfpub.epa.gov/npdes/stormwater/authorizationstatus.cfm

Federal & State Stormwater Resources

- **EPA National Website for Industrial Stormwater…**
  http://cfpub.epa.gov/npdes/stormwater/indust.cfm

- **Training Resources for Stormwater**
  http://cfpub.epa.gov/npdes/outreach.cfm?program_id=0&otype=1
  e.g., EPA webcast on MSGP monitoring

- **SWPPP Preparation**
  - **Georgia Tech:** ***http://www.gatechenvironment.com/index.htm***

- **Stormwater Regulations**
  http://cfpub.epa.gov/npdes/regs.cfm?program_id=6

- **Sector E: Glass, Clay, Cement, Concrete, and Gypsum Product Facilities (PDF) (EPA 833-F-06-020)**
  http://www.epa.gov/npdes/pubs/sector_e_glass.pdf

- **Sector J: Mineral Mining and Dressing Facilities (PDF) (EPA 833-F-06-025)**
  http://www.epa.gov/npdes/pubs/sector_j_mineralmining.pdf

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