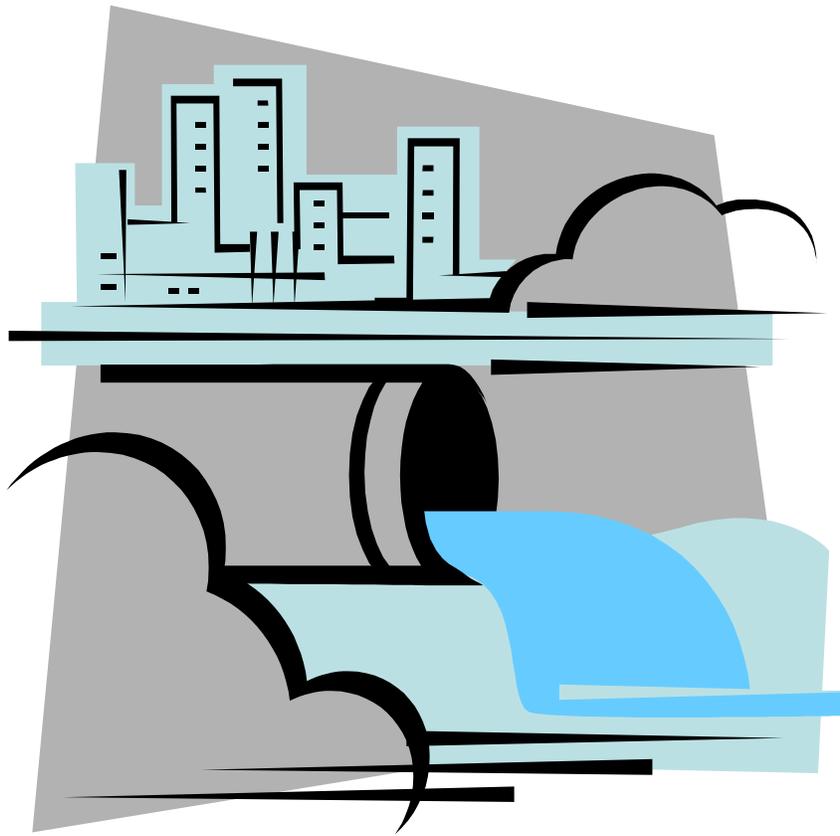




Industrial Storm Water Certified Operator Training Manual



Michigan Department of Environmental Quality (MDEQ)
Water Resources Division (WRD)
Manual Revision Date: 2/22/2016

In addition to this manual it is important to utilize the Michigan Department of Environmental Quality (MDEQ), Water Resources Division (WRD), Industrial Storm Water webpage to prepare for the Industrial Storm Water Certified Operator training session and exam. Two sections specifically to focus on include the Visual Assessment and Activity Specific Control sections which will need to be viewed in order to answer some of the questions in the review exercise in Appendix A of this manual. The webpage can be viewed by clicking the following link:
http://www.michigan.gov/deq/0,1607,7-135-3313_3682_3716-24018--,00.html

If you have questions regarding the MDEQ, WRD Industrial Storm Water Program please contact your local Industrial Storm Water Program district staff. Industrial Storm Water Program district staff contact information can be found by clicking on the following link:
http://www.michigan.gov/documents/deq/wrd-ind-sw-staff_344826_7.pdf

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INTRODUCTION

The federal Clean Water Act requires industries with storm water discharges to surface waters to obtain a storm water permit under the National Pollutant Discharge Elimination System (NPDES). The Michigan Department of Environmental Quality (MDEQ) has been given the authority to administer this program. In addition, Michigan law requires that anyone who discharges liquid waste to waters of the state must have their pollution control measures under the supervision of someone who has been certified by the state.

The Michigan industrial storm water permits require permitted industrial facilities to:

- Obtain the services of an Industrial Storm Water Certified Operator
- Develop a Storm Water Pollution Prevention Plan (SWPPP)
- Implement all pollution prevention measures described in the SWPPP, including the inspection and maintenance programs to ensure lasting effectiveness
- Eliminate all unpermitted or illicit discharges to surface waters
- Conduct routine and comprehensive inspections (including visual assessments) to evaluate the effectiveness of pollution prevention measures
- Develop and implement an employee training program
- Update pollution prevention measures and the SWPPP as necessary
- Write and submit an annual report summarizing inspections, problems, and changes to the plan
- Maintain documentation which demonstrates compliance with the permit requirements

This manual is organized in the following manner:

- Basic information on water quality and storm water
- An overview of the federal and state regulations that relate to storm water
- The storm water permitting framework
- What industrial facilities need to do to meet the requirements of the storm water general permit
- Components of a SWPPP
- Review exercise
- Appendix

You can also look for information on our Web site: <http://www.michigan.gov/degstormwater>.

Informational videos are available at:

http://www.michigan.gov/deg/0,4561,7-135-3313_3682_3716-24018--,00.html

You can also call the MDEQ's Office of Environmental Assistance at 1-800-662-9278.

http://www.michigan.gov/deg/0,4561,7-135-3307_36106---,00.html

WATER QUALITY AND STORM WATER

Let's begin with a brief overview of water quality issues, especially where they relate to precipitation and runoff. From a raging stream during spring snowmelt, to a gentle summer rain, to the slow movement of water through the ground, water is in constant motion.

The movement and endless recycling of water between the atmosphere, the land surface, and underground aquifers is called the hydrologic cycle. This movement, driven by the energy of the sun and the force of gravity, supplies the water needed to support life. Understanding the hydrologic cycle is basic to understanding all water and is a key to the proper management of water resources. Many processes work together to keep Earth's water moving in a cycle. There are five processes at work in the hydrologic cycle: condensation, precipitation, infiltration, runoff and evapotranspiration. These occur simultaneously, and except for precipitation, continuously.

Storm water and runoff are part of this natural hydrologic process. Under natural conditions, the majority of rainwater that falls to the ground infiltrates the ground or evaporates.

However, industrial activities can alter natural drainage patterns and add pollutants to rainwater and snowmelt. The introduction of pollutants to storm water most commonly occurs at industrial facilities when operating procedures allow industrial materials to become exposed to storm water. This potentially contaminated storm water may then enter storm sewer systems or flow over the ground and discharge to lakes, rivers, streams, and wetlands.

The best way to combat this is through pollution prevention. It is better for the environment and more cost effective to prevent the contamination of storm water at the source. This concept has led to the development of the current storm water regulations.

The goal of the storm water program is to reduce pollution entering Michigan's waters by implementing controls designed to prevent the contamination of storm water runoff.

Preventing Pollution is the Best Solution!

Most automobile drivers are aware that roads are slickest after the first few minutes of a rainstorm. It is in those first few minutes that oil, grease, lead, and other pollutants that have accumulated on the pavement are picked up by water and transported to underground storm sewers or roadside ditches. This washing action by storm water is referred to as the first flush. It has been determined that this first flush of storm water runoff contains the highest percentage of pollutants.

There are a variety of pollutants commonly found in storm water that can impair water quality:

Hydrocarbons: Common sources of hydrocarbons (gasoline, oil, and grease) in industrial storm water runoff are from spills at oil storage and fueling facilities, automobiles and equipment, and improper disposal of waste oils. Hydrocarbons are known to be toxic to aquatic organisms at

relatively low concentrations, and are a major concern when addressing storm water runoff controls.

Toxic Pollutants: Sources of toxic pollutants are quite varied. Pesticides, herbicides, corroded metals, wood preservatives, paints, used oils, solvents, and machinery fluids all can have toxic effects on aquatic life, and may contaminate drinking water supplies. Some toxic substances can accumulate in the food chain, resulting in fish advisories limiting the amounts and types of fish we can safely eat.

Organic Enrichment: Food processing facilities, airports with de-icing activities, septic systems, animal waste, combined sewer systems, and illicit storm sewer connections are sources of oxygen demanding substances. Storm water runoff can deposit large quantities of these substances in our lakes or streams. This will increase the levels of BOD (biological oxygen demand), COD (chemical oxygen demand), and TOC (total organic carbon), and decrease the levels of dissolved oxygen in the aquatic environment. The pulse of high oxygen demand that can occur during and after a storm water runoff event can significantly deplete oxygen supplies in shallow, slow moving waters. Oxygen depletion is a common cause of fish kills and odor problems.

Nutrients: Nutrients are a common component of storm water runoff. The addition of phosphorus and nitrogen to storm water runoff from landfills, septic fields, animal waste, illicit connections, erosion, and over-fertilization can result in algal blooms, excessive plant growth, ammonia toxicity, and groundwater contamination. In freshwater systems phosphorus is the main cause of excessive plant and algal growth.

Pathogens: The presence of pathogens in surface water inhibits recreational uses such as swimming and boating. Bacteria and viruses are pathogens that can cause ear and/or intestinal problems as a result of contact. Common sources of bacteria and viruses are illicit drain connections, sanitary sewer overflows, animal waste, and failing septic systems.

Sediment: Sediment is one of the most widespread pollutants in surface water. It is generated when wind and water erode unstable soils. Erosion commonly occurs from areas of construction activities, bare soil around a facility, gravel parking lots, landfills, access roads and mining operations. Stream bank and stream bed erosion can be caused by changes in hydrology. Many pollutants (nutrients, hydrocarbons, and toxic substances) attach to sediment particles, particularly fine sediments such as clay. Therefore, as sediment is carried to a water body, it can carry other pollutants with it. Even without attached pollutants, sediment can be very destructive to aquatic systems by covering and damaging habitat.

Salts: The most common source of chlorides and other salts in urban storm water runoff is deicing of impervious surfaces such as roads, parking lots and walkways. Because salt is extremely soluble, almost all salt applied to roads, parking lots, and walkways ends up in surface or groundwater. High chloride concentrations can be toxic to many freshwater organisms, and there are numerous documented cases of water contamination caused by storm water runoff from inadequately protected stockpiles of salt and sand/salt mixtures.

REGULATIONS RELATED TO STORM WATER

Originally enacted in 1948, the Federal Water Pollution Control Act was the first legislation passed to protect water quality in the United States. However, the Act did little to control discharges of pollutants into the nation's waterways. By the mid-1960's, approximately two thirds of the nation's rivers, lakes and coastal areas were rated as unsafe for fishing and swimming.

Highly publicized events such as the Cuyahoga River fire of 1969 and growing public concern for water quality led to the Federal Water Pollution Control Amendments of 1972. Better known as the "Clean Water Act" the primary purpose of the Act was to eliminate the pollution problems caused by municipal sewage and industrial waste water.

Point source discharges of pollutants to navigable waters required authorization under a National Pollutant Discharge Elimination System (NPDES) permit. As pollution control measures, such as waste water treatment plants, were implemented for these point source discharges, water quality problems were reduced but not eliminated.

To investigate another potential source of contamination to our waterbodies, a study called the Nationwide Urban Runoff Program was conducted. In this study, storm water discharges from municipal separate storm sewer systems were analyzed from 1978 to 1983. The results indicated that storm water runoff contained many pollutants. In fact, it was shown that a large percentage of streams and lakes had impaired uses, at least partially due to the pollutants in storm water discharges.

As a result, the 1987 amendments to the Federal Clean Water Act recognized that storm water was a significant source of water pollution. The amendments redefined point source discharges to include urban and industrial storm water runoff directed to surface water through discrete conveyances such as a pipe, ditch, graded lot or constructed waterway. In addition, Congress directed the U.S. Environmental Protection Agency (USEPA) to develop regulations for storm water discharges associated with construction activities, municipal separate storm sewer systems, and industrial activities. The Final Rule and NPDES Application Requirements for Storm Water Discharges are identified in the Code of Federal Regulations at 40 CFR 122.26, as amended.

State Regulations

In 1994, the State of Michigan compiled all of its environmental laws into the Natural Resources and Environmental Protection Act, Public Act 451 of 1994, as amended (NREPA).

Part 31 of NREPA was created to protect and conserve the water resources of the State. Part 31 prohibits the discharge of pollutants to waters of the State. This includes the prohibition of discharging pollutants to the surface waters of the state and any obstruction or occupation of floodways.

Section 3112 - NPDES Permit

A person shall not discharge any waste or waste effluent into the waters of this state unless the person is in possession of a valid permit from the MDEQ.

Section 3110 - Certified Operators

Every industrial or commercial entity that discharges liquid wastes into any surface water or groundwater other than through a public sanitary sewer shall have waste treatment or control facilities under the specific supervision and control of persons who have been certified by the MDEQ as properly qualified to operate the facilities.

Section 3115 - Penalties

Under Section 3115, a maximum fine of \$25,000 per day per violation may be imposed under civil action. There are also provisions for criminal penalties.

Section 3118 (4) - Storm Water Discharge Fees

There is a fee for a permit related to industrial activities. Any person holding an industrial permit on January 1 of a given year shall be assessed an annual discharge fee.

Part 91, Soil Erosion and Sedimentation Control:

- Construction activities may also occur at a facility. If such activities do occur, a Soil Erosion and Sedimentation Control Permit may be required. Soil Erosion and Sedimentation Control Permits must be obtained from the county or municipal enforcing agent whenever construction activities occur within 500 feet of a waterbody or whenever one or more acres of land are disturbed.
- Mining that involves the removal of clay, gravel, sand, peat, or topsoil also requires a Soil Erosion and Sedimentation Control Permit. In addition, if water is discharged from a pit, an individual NPDES permit or the General Permit for Sand and Gravel Mining Wastewater (MIG499000) is required.

Part 201, Environmental Remediation, of Act 451: Many sites of environmental contamination and clean-up have been placed on Michigan's list of Sites of Environmental Contamination.

The following rules were promulgated pursuant to Part 31 of NREPA by the MDEQ:

- Part 21, Rule 2190 - In Michigan, permitting for construction sites one acre or larger is regulated under permit-by-rule. The permit-by-rule fulfills the federal storm water regulation for construction sites. Applicants must have a Soil Erosion and Sedimentation Control Permit from the local or county enforcing agent to apply to the MDEQ for coverage under the permit-by-rule. A storm water operator for construction sites (with certification training and exam specifically for construction operations) is also a requirement.

The rules provide automatic permit coverage for construction sites that disturb one to five acres, so long as the site has coverage under the Soil Erosion and Sedimentation Control Program. Even though there is no application requirement or permit fee for these one to five acre sites, construction site owners must comply with the permit-by-rule requirements.

Construction sites that have an earth disturbance of 5 acres or larger need to submit a Notice of Coverage to the MDEQ.

- Part 10, Treatment Plant Operators, Rule 323.1251 – 323.1259: The MDEQ may revoke the certificate of a person who, after a hearing, is judged incompetent or unable to properly perform the duties of the operator in his classification, or who has practiced fraud or falsification or who has been negligent in the discharge of his duties.

STORM WATER PERMITTING FRAMEWORK

Classes of Permits

In Michigan, two classes of NPDES permits are issued to cover storm water discharges from industrial sites: either a general permit or an individual permit. The general permits contain the minimum requirements for protecting water quality. A facility with this type of permit coverage will be authorized to discharge when they receive a certificate of coverage (COC) under the general permit.

If the conditions at an industrial facility cannot be properly managed by the requirements of the general permit, an individual permit written specifically for the facility may be issued. An individual permit may contain additional requirements such as regular sampling, monitoring, end of pipe treatment, or effluent limits. If the facility has additional types of wastewater discharges, which are authorized by an individual NPDES permit, the storm water runoff can be authorized in that individual permit as well. In that case, the individual permit would include the same minimum requirements for the storm water discharge as are found in the general permit.

Types of General Storm Water Permits

There are two types of industrial storm water general permits in Michigan:

1. Storm Water from Industrial Activity
2. Storm Water with Required Monitoring

The Storm Water with Required Monitoring general permit requires a Short-Term Storm Water Characterization Study (STSWCS) of storm water discharges from certain areas. Facilities meeting one of the following conditions must be covered under the “Storm Water with Required Monitoring” general permit:

- The facility has secondary containment structure(s) mandated by state or federal regulations, from which storm water is periodically discharged to waters of the state.
- The site has been classified pursuant to Part 201 of Act 451 as a site of environmental contamination or clean-up where known or potential impacts on surface waters exist that cannot be adequately guarded against under the requirements of the Storm Water from Industrial Activity general permit.
- The operation has other activities or areas that may contribute pollutants to the storm water for which the MDEQ determines monitoring is necessary.
- The operations has been designated a “significant contributor to pollution” by the MDEQ.

Because of the water quality concerns, a STSWCS of the discharges from these areas of concern is required. The plan must be submitted to the MDEQ Water Resources Division (WRD) district supervisor for approval six months after the COC is issued. Guidance for developing a STSWCS can be found at: http://www.michigan.gov/documents/deq/wrd-isw-sampling-short-term_398401_7.pdf

Permit Fee

An annual fee of \$260 will be assessed to all facilities that have a permitted storm water discharge. All facilities that have authorization to discharge storm water on January 1 will be responsible for the annual fee. Storm water invoices are required to be issued by the MDEQ, WRD before February 1. In response to the MDEQ, WRD's annual notice, the permittee shall remit the fee to the address on the notice, postmarked no later than March 15 of each year.

Who Needs a Storm Water Permit

There are three criteria to consider when determining if coverage is needed under the NPDES industrial storm water permit.

First, determine if the industry is identified in the federal storm water regulations at 40 CFR, Section 122.26(b)(14). Many regulated industries are identified by Standard Industrial Classification (SIC) code, while others are included by narrative description.

There is another industrial classification system termed North American Industrial Classification System (NAICS). This classification system can be converted to the SIC code system at the following website: <http://www.census.gov/eos/www/naics/concordances/concordances.html>

In general, the following industrial categories are regulated:

- Manufacturing
- Warehousing
- Transportation
- Mining
- Landfills
- Power Plants
- Recycling Facilities
- Waste Water Treatment plants and
- Hazardous Waste Treatment Storage and Disposal facilities

A complete list of regulated industries may be found at:

http://www.michigan.gov/documents/deq/wrd-isw-fed-sic_398366_7.pdf

Once it is confirmed that the facility is a regulated industry, the next step is determining if there is a point source discharge of storm water to surface waters of the State. Surface Waters of the State include rivers, lakes, streams, and wetlands. The surface water that receives the point source discharge is called the receiving waters.

A point source is any discernible, confined, and discrete conveyance that discharges storm water into surface waters. Examples of point source discharges include, but are not limited to, pipes, ditches, channels, tunnels, conduits, or anything that conveys storm water into surface waters. In most cases, land graded to convey storm water runoff across a piece of property would create a point source discharge of storm water.

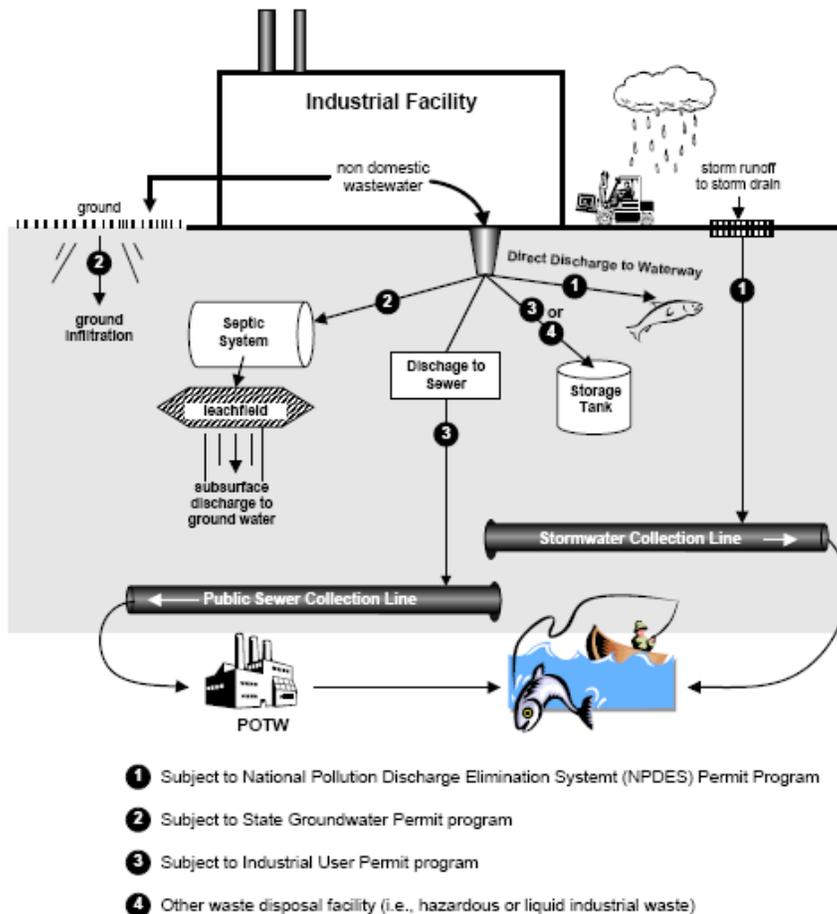
It is important to understand the following terms:

- Point of discharge is the location of a point source discharge where storm water is discharged directly into a separate storm sewer system.
- Outfall is the location at which a point source discharge enters the surface waters of the state.

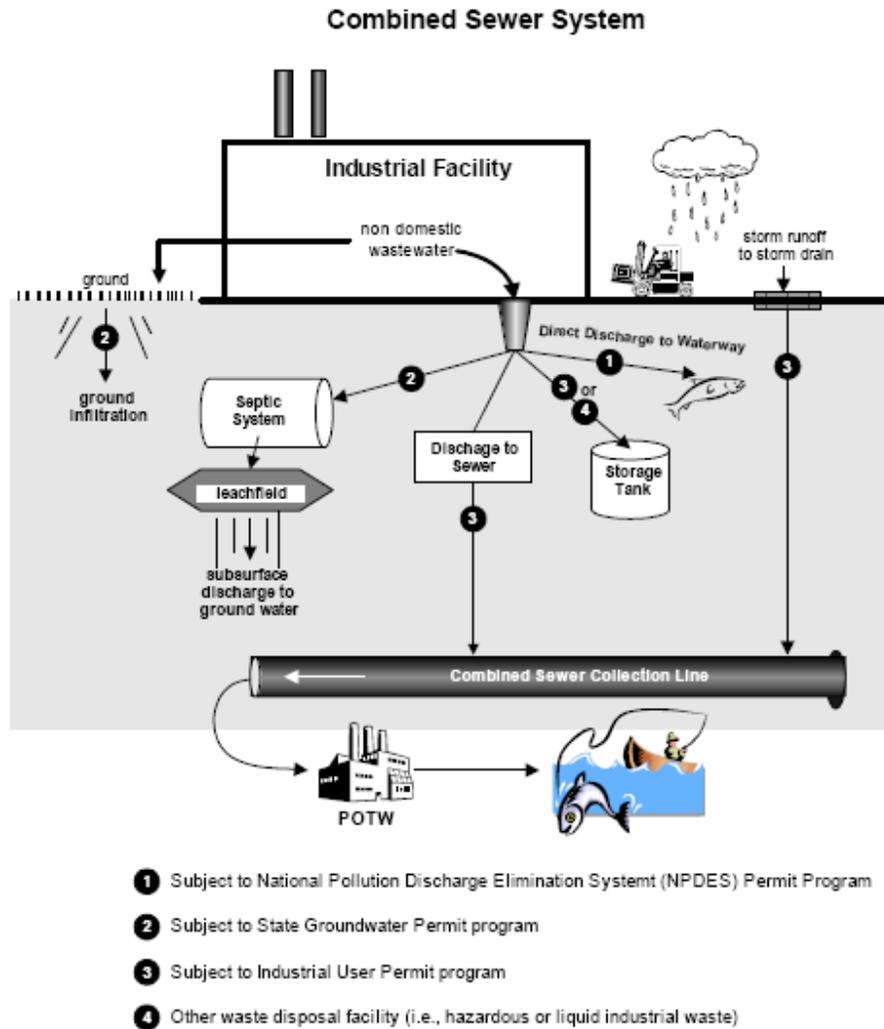
At many facilities, storm water is discharged from the facility into a municipal storm sewer system. It is important to understand whether the municipal sewers are separate or combined.

In a separated storm sewer system, storm water is kept separate from sanitary sewage and discharges directly into a surface water body. The sanitary sewage, which also may contain industrial waste water, is directed to the local waste water treatment plant where it is treated and then discharged. Permit coverage is needed when storm water is discharged to a separated storm sewer system.

Separate Sewer System



In a combined sewer system, storm water is combined with sanitary sewage, and is directed to the local waste water treatment plant. If all storm water from the facility is discharged to a combined sewer system, storm water permit coverage is not needed.



The final step in the determination process is evaluating the potential for exposure of industrial materials or activities to storm water. Industrial materials or activities include, but are not limited to, material handling equipment, industrial machinery, raw materials, intermediate products, by-products, waste materials and final products. However, final products that are designed for outdoor use are not considered exposure.

Facilities without exposure may apply for an exemption from the storm water permit requirements by submitting an application for No Exposure Certification in Miwaters. No Exposure Certification guidance can be found at: http://www.michigan.gov/documents/deq/wrd-isw-no-exposure-guidance_398400_7.pdf

To remain exempt from the storm water permit requirements, the condition of no exposure must be maintained at all times and the application for No Exposure Certification submitted in Miwaters every five years.

If there is exposure of any industrial materials or activities to storm water runoff that discharges to surface waters of the state, storm water permit coverage is required.

In summary, facilities must obtain storm water permit coverage if all of the criteria apply:

- *The facility's SIC code is regulated*
- *Storm water from the property discharges to surface waters of the state, and*
- *There is exposure of industrial materials*

Contact your district office if you have questions regarding permit coverage. District contact information can be found at: http://www.michigan.gov/documents/deq/wrd-ind-sw-staff_344826_7.pdf

MiWaters

In 2015, the MDEQ Water Resources Division (WRD) launched a new information system called MiWaters. MiWaters is a state-of-the-art, comprehensive, web-based permitting and compliance database. The system replaces over 25 applications and databases currently used by the WRD, some of which are over 30 years old.

MiWaters establishes a streamlined electronic permitting process, allowing Michigan to fulfill federal electronic reporting requirements and providing an online component for access to public information. The focus of MiWaters is permitting and compliance, including National Pollutant Discharge Elimination System (NPDES), storm water, groundwater discharge, aquatic nuisance control, Part 41 construction, and land and water interface permits. It also includes electronic reporting of untreated or partially treated sanitary wastewater.

One of WRD's focuses with MiWaters was to have a system that makes it easier for the WRD to communicate with, and provide services electronically to the regulated community.

Each facility will need to setup an account in MiWaters. All permit applications and permit required submittals will need to be submitted electronically. Those with a MiWaters account will be able to manage permissions, deciding who can view, edit, and submit applications or submittals. MiWaters provides near real-time notifications, to the permittee, of any violations determined by the system or by staff, providing permittees with an early "heads up" and opportunity to correct problems.

Certain types of forms and reports, particularly those administered under the federal NPDES program, require that the user submit a Certifier Agreement Form that must be approved by the department before these forms and reports can be submitted.

Applying for Storm Water Permit Coverage

1. New facility that has not started industrial activity

In order for a new facility to be issued permit coverage, the facility must be able to certify the following:

- A Storm Water Pollution Prevention Plan (SWPPP) has been developed for the facility.
- The facility has a certified industrial storm water operator.
- There are no unauthorized discharges from the facility.
- Nonstructural storm water pollution preventive measures and source controls identified in the SWPPP will be implemented when industrial activity begins.
- Structural storm water pollution prevention controls identified in the SWPPP will be installed and operational when industrial activity begins.

Once these requirements are completed, the permittee may apply for permit coverage by submitting the application - Notice of Intent (NOI) for coverage under the National Pollutant Discharge Elimination System (NPDES) for Storm Water Discharges Associated with Industrial Activity. The NOI application asks for general location information including facility address, township, range, $\frac{1}{4}$ - $\frac{1}{4}$, section, latitude, longitude, and county. You will also need to know the body of water (receiving water) to which your storm water is discharged (either directly or via an underground storm sewer or roadside ditch). You will need to provide mailing address(es), contact information, standard industrial classification code, and name and certification number of the certified industrial storm water operator.

Please note that the application must be signed by the principal executive officer of the company (such as the company owner, president or vice president). A designee may also sign the application if that person is responsible for the overall operation of the facility and has full authority on behalf of the legal owner to submit the application. Written documentation of this designation is required. The submittal of the NOI application by an authorized user with approved certifier status certifies that the general permit requirements have been completed.

If the facility has additional waste water discharges, other than storm water, contact a MDEQ Water Resources Division District Office.

2. Existing facility without storm water permit coverage

If the facility is an existing facility (already in operation and with existing exposure of industrial materials or processes) without prior storm water coverage, it is in violation of state and federal regulations. In order to resolve the violations the facility must enter into a general administrative consent order (ACO). The ACO is a written agreement that resolves the violation of operating without permit coverage and describes the actions to be taken to achieve compliance with the storm water regulations. The fines associated with the ACO are much lower than the maximum fines in the regulations.

The General ACO for Unpermitted Discharges No. ACO-UD12-100 is available to industrial storm facilities that meet certain conditions. Eligibility for the Consent Order is limited to those facilities that currently have a storm water discharge, but have never held a permit issued by the MDEQ, WRD for that storm water discharge. The Consent Order is not available to facilities with expired permits for storm water discharges. Please also note that the Consent Order resolves the violation of discharging without a

permit from the MDEQ, WRD, however the WRD may invalidate the Consent Order if the discharge is found to have caused any damage to surface water, storm water or groundwater quality that may have occurred as a result of current or past discharges.

Facilities that have received written notification from the MDEQ, WRD that industrial storm water permit coverage is or may be required, have 90 days to submit a complete application called Notice of Intent (NOI) for coverage under the National Pollutant Discharge Elimination System (NPDES) for Storm Water Discharges Associated With Industrial Activity and Certificate Of Entry (COE) in Miwaters. Please be aware that if the NOI/COE application is received after 90 days, the facility may no longer be eligible for entry into this Consent Order. The submittal of the NOI/COE application by an authorized user with approved certifier status certifies that the general permit requirements have been completed.

The NOI/COE compliance assistance document is available at:

http://www.michigan.gov/documents/deq/deq-wrd-stormwater-CertificateofEntry-Unpermitted_421960_7.pdf

Certain facilities may not qualify for ACO-UD12-100, due to previous permit coverage which has lapsed or failure to submit to NOI/COE application within 90 days of written notification from the MDEQ. Facilities with previous permit coverage which has lapsed do not qualify for a General ACO, and will need to contact MDEQ district staff. Facilities which have failed to submit the NOI/COE application within 90 days of written notification may be required to enter an alternative ACO with a higher penalty.

3. Storm water permit reissuance

If the facility is an existing facility already covered under a storm water general permit and is applying for reissuance under a new general permit, the NOI application for reissuance has to be submitted in MiWaters six months prior to the expiration of the Certificate of Coverage (COC). The expiration date may be found near the bottom of the COC. The submittal of the NOI application by an authorized user with approved certifier status certifies that the general permit requirements have been completed.

4. Portable industrial facilities

Portable industrial facilities also need to submit a Notice of Intent for permit coverage. Examples of these facilities include portable concrete batch plants, rock or concrete crushers and asphalt plants. A separate NOI application must be submitted in MiWaters for EACH portable facility.

If the portable facility is to be moved to a satellite location, the permittee must notify the MDEQ of the relocation in writing, at least 10 days prior to start up at the new location.

INDUSTRIAL STORM WATER DISCHARGE PERMIT REQUIREMENTS

The pollution prevention components of the Michigan general storm water permits and the individual NPDES permits with storm water discharges require permitted industrial facilities to:

- Obtain the services of a certified industrial storm water operator
- Develop a SWPPP
- Implement all pollution prevention measures described in the SWPPP , including the inspection and maintenance programs to ensure lasting effectiveness
- Eliminate all unpermitted or illicit discharges to surface waters
- Conduct comprehensive inspections to evaluate the effectiveness of pollution prevention measures
- Conduct routine inspections as part of the preventative maintenance and good housekeeping programs
- Update pollution prevention measures and the SWPPP as necessary
- Write and submit an annual report summarizing inspections, problems, and changes to the plan
- Maintain documentation which demonstrates compliance with the permit requirements

If applicable, a STSWCS plan is required to be submitted within six months to the WRD district supervisor for approval.

STORM WATER OPERATOR REQUIREMENTS

The applicant and/or permittee shall have an industrial storm water operator certified by the MDEQ, as required by Section 3110 of Part 31 of Act 451. The following are the responsibility of the Industrial Storm Water Certified Operator:

- The certified operator shall have supervision over the facility's storm water treatment and control measures included in the SWPPP.
- The certified operator shall conduct comprehensive storm water inspections per the frequency in the general permit
- The certified operator shall conduct visual assessment of storm water discharges in correlation with each comprehensive storm water inspection
- The certified operator shall review and sign the SWPPP

The storm water operator may be someone who works at the facility, a regional corporate environmental manager, a consultant, or anyone else the permittee designates to receive certification and perform these duties. However, the certified operator should be someone who is at the facility on a regular basis.

The Industrial Storm Water Certified Operator at the facility shall review and sign the facility's SWPPP, along with the permittee or his or her designee. If the facility's storm water operator leaves the facility, or no longer has operator responsibilities, the permittee must immediately obtain another storm water operator. The new operator must review and sign the SWPPP. The

permittee shall provide written notification including the name and certification number of the new operator to the District Supervisor.

It is recommended that a facility have multiple certified industrial storm water operators to effectively manage the facility's storm water program. If there are multiple certified operators at the facility their names should be listed in the SWPPP.

A team of people should be selected to help develop, implement, maintain, evaluate, and revise the SWPPP. This team should be made up of people who represent all facets of a facility's operations, including management. At some facilities, the certified operator may be the only member of the team.

How to obtain an Industrial Storm Water Certified Operator Certification

To become certified, an individual must attend a training session and take the Industrial Storm Water Certified Operator exam at one of MDEQ's district offices. The training/exam session takes about 4 hours, and is offered regularly throughout the year at each district office. After taking the exam, a form must be submitted to the MDEQ Cashier's Office with a check for \$30. The industrial storm water certification is valid for five years.

Certificates are issued and renewed by the Operator Training Unit. It is important that the MDEQ has your current home address so that renewal information can be sent to you. Renewal information is sent in January of the year that the certification will expire.

How to renew the Industrial Storm Water Certified Operator Certification

In the year that an individual's certification expires, he or she is required to participate in a Recertification Training session. This is a refresher course, and will include information about any recent changes in permit requirements. There is no exam given at this training. The trainer will sign the recertification form to verify participation. The form will then need to be sent to the MDEQ Cashier's Office with a check for \$95, and must be postmarked by August 31 of the calendar year in which the certification expires.

A schedule of certification training/exams and recertification training sessions is available on the MDEQ Industrial Storm Water web site: http://www.michigan.gov/deq/0,4561,7-135-3313_3682_3716-24018--,00.html

Certificate Revocation and Penalties for Negligence

The MDEQ may revoke the certificate of a person who has practiced fraud or falsification or who has been negligent in the discharge of his/her duties. In addition, under Part 31 of NREPA, Section 3115, there is a \$2,500 - \$25,000 fine for negligence or falsification of records or reports. Upon conviction, in addition to a fine, the court in its discretion may sentence the defendant to imprisonment.

Storm Water Pollution Prevention Plan (SWPPP) Development

The SWPPP is a written procedure to reduce the exposure of significant materials to storm water runoff and to reduce the amount of significant materials in the storm water discharge. The storm water discharges from the facility must meet the Water Quality Standards.

This plan must be designed to work at your facility. Make it user friendly, readable, and to the point. Do not include information that is not relevant or procedures that are not feasible for your situation.

If your facility has other environmental protection plans, such as a Pollution Incident Prevention Plan or a Spill Prevention Countermeasures and Control Plan, you may want to consider combining your SWPPP with one or more of these documents. There will be overlap in many of the components of these plans. If multiple plans are combined make sure the table of contents is detailed enough to allow information to be easily accessible.

The MDEQ can provide you a SWPPP template and sample SWPPPs to aid in the development of a plan for your facility. Contact a MDEQ, Water Resources Division District Office, or download copies from the Industrial Storm Water webpage: http://www.michigan.gov/deq/0,4561,7-135-3313_3682_3716-24018--,00.html. Remember that these are guides and they will need to be customized to address the industrial operations at your facility.

The SWPPP shall identify potential sources of contamination and describe the controls necessary to reduce their impacts. The following objectives will aid in achieving the goal of the SWPPP:

- Identify sources of significant materials that could mix with storm water and be discharged from the facility. An evaluation of the reasonable potential for contribution of significant materials to the storm water runoff from different areas of the facility is required.
- Identify nonstructural controls to be used at the source to prevent significant materials from entering storm water.
- Provide structural controls, if needed, to prevent significant materials from entering storm water and to give additional control or treatment for storm water that has become contaminated by significant materials.
- Ensure that the SWPPP is evaluated and updated annually. The SWPPP checklist can be obtained from the Industrial Storm Water webpage. Based on the review, the SWPPP shall be revised if needed, and a written report shall be developed. Most facilities are required to submit the annual report to MDEQ on or before January 10th of each year. Some general permits only require the annual report to be retained at the facility. The SWPPP Annual Review Report Form can be obtained from the Industrial Storm Water webpage.

The goal of the SWPPP is to prevent storm water from contacting contaminants before being discharged into the receiving waters.

Source Identification

The first step in developing a SWPPP is source identification. A site map must be completed to adequately assess the facility. The storm water permit requires the following 13 items to be identified on the site map:

1. Buildings and other permanent structures (including outbuildings)
2. Storage or disposal area for significant materials (include inside and outside areas)
3. Secondary containment structures and descriptions of what is contained in the primary containment structures

4. Storm water discharge points (which include outfalls and points of discharge), numbered or otherwise labeled for reference
5. Location of storm water and non-storm water inlets (catch basins, roof drains, conduits, drain tiles, detention pond riser pipes, and sump pumps)(numbered or otherwise labeled for reference)contributing to each discharge point
6. Location of NPDES permitted discharges other than storm water (this would include non-contact cooling water, vehicle wash water, etc.)
7. Outlines of the drainage areas contributing to each discharge point (use arrows to indicate the storm water flow and shading, dashed lines, etc. to detail the storm water drainage patterns of the property)
8. Structural runoff controls or storm water treatment facilities (this includes oil water separators, detention ponds, catch basin inserts, etc.)
9. Areas of vegetation with brief descriptions (this includes areas of grass, field, wetland, etc.)
10. Areas of exposed and/or erodible soils (this includes gravel lots, sparsely vegetated areas, bare earth, etc.)
11. Impervious surfaces (this includes roof tops, concrete, asphalt, etc.)
12. Name and location of receiving waters and (ex. Rush Creek via municipal storm sewer system, County Drain #31, unnamed ditch to Grand River)
13. Areas of known or suspected impacts on surface waters as designated under Part 201 of the Michigan Act (areas that have known soil or ground water contamination)

The bottom line is that the map should show everything that is relevant to storm water at the facility. A sample site map can be found in the MDEQ sample SWPPP at:

http://www.michigan.gov/documents/deg/wrd-isw-swppp-sample_398408_7.pdf

Once the site map has been completed, the written portion of the SWPPP can be developed. In order to identify sources of significant materials at a facility, one has to know what a significant material is. A significant material is any material that can degrade or impair water quality.

Examples include but are not limited to:

- Soils
- Salt piles
- Raw materials
- Fuels and lubricants
- Solvents and detergents
- Wood and metal chips
- Plastic pellets
- Fertilizers and pesticides
- Food products
- Waste products (including litter)
- Foundry sand, ash, and slag
- Polluting materials
- Wastewater
- Plant and animal waste

While developing the SWPPP, all sources of potential storm water contamination need to be identified. Remember the outside and inside of the facility must be evaluated to determine the significant materials and practices that could be sources of contamination to storm water runoff. Often significant materials get tracked outside and exposed to storm water runoff by vehicles or employees.

The storm water permit requires that the SWPPP include a list of all significant materials that have the reasonable potential to contaminate storm water runoff.

Using a table is an efficient way to detail all of the information required. For each significant material identified, the SWPPP shall describe the ways in which the significant material is or has the reasonable potential to become exposed to storm water runoff. In addition, the inlet and discharge point through which the material may be discharged if released shall also be identified. A sample table can be found in the MDEQ sample SWPPP at:

http://www.michigan.gov/documents/deg/wrd-isw-swppp-sample_398408_7.pdf

To further describe the pollutant sources, the SWPPP shall include an evaluation and written description of the reasonable potential for the contribution of significant materials from the following 12 areas or activities:

1. Loading, unloading, and other material handling operations
2. Outdoor storage including secondary containment structures
3. Outdoor manufacturing or processing activities
4. Significant dust or particulate generating processes
5. Discharge from vents, stacks, and air emission controls
6. On-site waste disposal practices
7. Maintenance and cleaning of vehicles, machines, and equipment
8. Areas of exposed and/or erodible soils
9. Sites of Environmental Contamination listed under Part 201 of the Michigan Act
10. Areas of significant material residues
11. Areas where wild or domestic animals congregate and deposit wastes and
12. Other areas where storm water may contact significant materials

A Listing of Significant Spills

The SWPPP must include a listing of significant spills or leaks that have occurred at the facility in the last three years. MDEQ has prepared a compliance assistance document, "Understanding When to Report Spills to Comply with the Industrial Storm Water Permit," to help permittees determine the appropriate course of action regarding the Noncompliance Notification and the Spill Notification requirements in the general permits. This compliance assistance document is available at:

http://www.michigan.gov/documents/deg/wrd-isw-permit_info-spill-reporting_398791_7.pdf

If a release occurs it shall be managed in accordance with the SWPPP. The SWPPP shall be updated to include a description of the release within 14 calendar days.

Summary of Existing Storm Water Sampling Data

During the source identification phase, any available sampling data should be evaluated and included in the SWPPP. Historical data may be useful in locating potential problem areas and in identifying polluting materials. Be sure to take into account the sampling and testing methods used. It is essential that the first flush be sampled, since the storm water has the highest concentrations of most pollutants during the first 30 minutes of the discharge. Monitoring the discharge throughout the life of the permit, may be a practical method of evaluating the effectiveness of the SWPPP.

If the Certificate of Coverage (COC) or individual NPDES permit authorizes a storm water discharge from Sites of Environmental Contamination, secondary containment structure, or from

facilities with sector specific requirements a short-term storm water characterization study is required. The short-term storm water characterization study plan must be submitted to the district supervisor for approval. Once the study is complete, the results must be submitted to the district supervisor for evaluation and approval. The monitoring data needs to be included in the SWPPP.

Nonstructural Controls

Nonstructural controls are practices that are relatively simple, fairly inexpensive, and applicable to a wide variety of industries or activities. These are typically everyday types of activities undertaken by employees at the facility. Many facilities may already have nonstructural controls in place for other reasons. The following are the eight nonstructural controls to be included in the SWPPP to prevent significant materials from coming into contact with storm water:

1. Preventive Maintenance

Preventive maintenance involves the regular inspection, testing, and cleaning of facility equipment, vehicles, and operational systems.

All systems and equipment in which a breakdown could result in significant materials getting into storm water runoff should be included in the preventive maintenance program. Conducting a significant material inventory will help identify the areas and situations where significant materials would have a reasonable potential to contact storm water.

Once the equipment and areas to inspect are identified in the significant material inventory the next step is to set up schedules for routine inspections. Routine inspections should focus on areas that have a greater potential to contaminate storm water. Those areas and situations identified in significant material inventory where a significant material has a medium to high potential to contact storm water should be included in the routine inspections. Routine inspections should include housekeeping activity areas, preventative maintenance items, material handling areas, fueling areas, etc.

Routine Inspections are an integral component of the preventative maintenance program and are the responsibility of the Certified Operator. At most facilities, it is recommended that they be performed and documented at least once every two weeks.

Promptly repair or replace any defective equipment found during the inspections. It is advisable to keep the most commonly needed spare parts on hand for equipment repair to minimize down time.

Develop a routine inspection form for record keeping in the preventive maintenance program. The routine inspection form should include by whom, when, and where the inspections were done, what was found, and any actions that were taken as a result of the inspections. A sample routine inspection form can be found in the MDEQ SWPPP template. These records should either be kept with the SWPPP or the location of the records should be referenced in the SWPPP.

2. Good Housekeeping

Good housekeeping practices are designed to maintain a clean and orderly work environment. Often the most effective first step in preventing pollution from getting into storm water is using common sense to improve housekeeping practices at the facility. A clean and orderly work area will reduce the potential for pollutants to come in contact with

storm water. If special equipment is utilized at the facility to aid in housekeeping activities they should be described in the SWPPP.

Routine inspections should be performed to ensure these good housekeeping practices are carried out. Routine housekeeping inspections may be combined with the routine inspections for preventative maintenance program. An inspection form can be developed to include housekeeping and preventative maintenance tasks.

The following practices should be included as part of the good housekeeping procedures:

a. Operation and Maintenance

These practices ensure that the processes and equipment are working properly:

- Maintain clean, dry surfaces
- Regularly pick up waste materials
- Perform preventive maintenance on equipment
- Routinely inspect for leaks and spills
- Ensure spill clean-up procedures are understood by all employees

b. Material Storage Practices

Proper storage can minimize the potential for the accidental release of materials and chemicals that can cause contamination of storm water runoff. It will also reduce damage and loss of materials on site. The following storage practices should be considered if applicable:

- Provide adequate aisle space
- Avoid storing acids and bases near each other
- Avoid storing flammable materials near heat sources
- Store critical materials in secondary containment
- Store materials away from direct traffic routes
- Store materials away from drip edges, down spouts, and storm water inlets whenever possible.
- Stack containers according to manufacturer's suggestions
- Store containers on pallets to minimize corrosion due to ground moisture
- Limit the number of persons handling hazardous materials, and properly train those that will be handling such materials

c. Material Inventory Procedures

Keeping an up-to-date inventory of all materials present on site will help to keep costs down, track material storage and handling, and identify which materials and activities pose the greatest risk to the environment. It will also help to limit the amount of any given material on-site at any one time. The following items should be included in the material inventory:

- Identify all chemical substances present in the work place
- Check to make sure all containers are labeled properly
- Check to make sure all labeling includes storage, handling and disposal instructions

d. Employee Participation

Frequent and proper training of employees in good housekeeping techniques and proper safety methods reduce the potential that materials or equipment will be mishandled. It also reduces the chance of injury, loss of materials, and release of

contaminants. Motivational programs may further increase the effectiveness of the training. The following are suggestions to promote employee participation and good housekeeping:

- Incorporate information sessions on good housekeeping practices into employee training programs
- Discuss good housekeeping at employee meetings
- Promote pollution prevention concepts through posters, brochures, newsletters, etc.
- Post bulletin boards with updated good housekeeping procedure tips and reminders

3. Comprehensive Site Inspections

Comprehensive site inspections are required by the storm water permit and must occur quarterly or on an approved alternate schedule. The inspection is required to be conducted by the certified operator.

An approximate schedule of the dates for the comprehensive site inspection must be included in the SWPPP. At a minimum one inspection shall be performed within each of the following quarters: January-March, April-June, July-September, and October-December. To ensure these inspections are performed, put it on a calendar or computerized scheduling system with other routine maintenance.

The permittee may request Department approval of an alternate schedule for comprehensive site inspections. Such a request may be made if the permittee meets the following criteria:

- The permittee is in full compliance with this permit
- The permittee has an acceptable SWPPP
- The permittee has installed and/or implemented adequate structural controls at the facility
- The permittee has all required inspection reports available at the facility
- The permittee has an Industrial Storm Water Certified Operator at the facility

The whole facility should be evaluated during the comprehensive inspection. This is in contrast to the routine inspections, which should focus on areas that have a reasonable potential for significant materials to contaminate storm water runoff. The comprehensive inspection should determine the overall adequacy of the SWPPP and should be coordinated with your annual plan review. A report detailing the results of the comprehensive site inspection and the corrective actions must be kept with the facility's storm water files. The comprehensive site inspection report shall contain a certification that the facility is in compliance with the storm water permit. A sample comprehensive site inspection form is available in the MDEQ SWPPP template.

The comprehensive site inspection shall include a review of the routine inspection reports, good housekeeping inspection reports, and any other paperwork associated with the storm water program.

The visual assessment of storm water discharges is a new requirement in recently issued permits. The visual assessment procedures must be developed within 6 months of the issuance/reissuance of the Certificate of Coverage or individual permit. The visual

assessment procedures must be included in the SWPPP as part of the comprehensive inspection procedures.

Visual assessment compliance assistance information can be found at the MDEQ, WRD Industrial Storm Water webpage at: http://www.michigan.gov/deq/0,4561,7-135-3313_3682_3716-24018--,00.html

The visual assessment of storm water needs to be conducted as part of each comprehensive inspection, but not necessarily on the same day. The visual assessment needs to be conducted during a rain event or snow melt resulting in a discharge of storm water from the site. The other portions of the comprehensive inspection are expected to take place during weather conditions that are more favorable for conducting a thorough assessment of nonstructural and structural controls.

Samples must be collected by the Industrial Storm Water Certified Operator in a clean, clear glass or plastic container during the first 30 minutes of the start of a discharge from a storm event. The sample must then be examined in a well-lit area and inspected for conditions which could cause a violation of the narrative water quality standards.

The narrative water quality standard states:

The receiving water shall contain no turbidity, color, oil films, floating solids, settleable solids, suspended solids or deposits as a result of this discharge in unnatural quantities, which are or may become injurious to any designated use.

The Visual Assessment shall be documented by the Industrial Storm Water Certified Operator. The documentation shall include the following:

- Sampling location(s) at the discharge point(s) identified on the site map (Part I.C.1.a.4)
- Storm event information (i.e., length of event expressed in hours, approximate size of event expressed in inches of precipitation, duration of time since previous event that caused a discharge, and date and time the discharge began)
- Sample collection date and time, and visual assessment date and time for each sample
- Name(s), title(s), and Industrial Storm Water Certified Operator number(s) of the personnel collecting the sample and performing the visual assessment
- Nature of the discharge (i.e., rain runoff or snowmelt)
- Observations made of the storm water discharge
- Probable sources of any observed storm water contamination
- If applicable, an explanation for why it was not possible to take samples within the first 30 minutes of discharge
- Photographic evidence of the sample against a white background, to be maintained along with the written report

4. Material Handling Procedures

Proper material handling and storage procedures can minimize the potential for the accidental release of materials that can cause contamination of storm water runoff. These

procedures need to address both inside and outside material handling activities. Materials spilled inside are frequently tracked outside by vehicles and foot traffic.

If your facility manages bulk liquids or other materials that have a potential to be spilled during loading and unloading activities, procedures that will minimize the possibility of spills should be developed.

Extra care should be taken when handling materials around doorways, floor drains, catch basins, and water bodies. Having material handling and storage procedures in place at a facility will decrease the potential for spills. The following are examples of ways you can prevent un-wanted spills or releases of materials:

- Avoid storing liquids near floor drains. If liquids have to be stored near floor drains, provide adequate containment.
- Avoid storing items that have the potential to leak near catch basins, or water bodies
- Avoid storing flammable materials near heat sources
- Avoid storing acids and bases near each other
- Avoid stacking materials too high
- Provide adequate aisle space for vehicle traffic
- In high-risk areas, where vehicle traffic is present, installation of barrier posts will reduce the potential for accidents.
- Proper labeling of material containers is necessary
- Barrels and drums stored outside should be kept off the ground
- Critical materials must be in secondary containment. A critical materials list can be found on the MDEQ website.

Good Material handling and storage procedures will reduce the potential for a spill. Spills and leaks together are one of the largest industrial sources of storm water pollution, and in many cases are avoidable. Developing spill response procedures is a very important part of the material handling component of the SWPPP. Establishing such procedures along with proper employee training can reduce accidental releases. Avoiding spills and leaks is environmentally and economically preferable to cleaning them up.

A spill prevention and response procedure should include:

- Identification of Potential Spill Areas
- Specification of Material Handling and Storage Procedures
- Define what are size of spills are reportable and to whom they need to be reported
- Detailed clean-up procedures, which include the location of spill kits, clean up equipment, identification of clean-up personnel, and phone numbers of appropriate personnel. A table may be used to indicate the location of spill kits, the contents, and where the detailed response plan is located.

In general, if there is a spill or release to the waters of the state, contact the MDEQ Pollution Emergency Alert System (PEAS) at 1-800-292-4706 during non-business hours. During regular business hours contact your local district office. It is important that you speak with someone at the district office. A voicemail message does not constitute adequate verbal notification.

A form for reporting spills and releases is available on the MDEQ website. Be aware, there may be additional state and local requirements regarding spills and reporting.

5. Erosion and Sedimentation Control

The SWPPP must identify areas prone to erosion and sedimentation. In addition the SWPPP must identify controls designed to reduce or eliminate sediment in the storm water runoff.

Some common areas that are prone to soil erosion and sedimentation are:

- Outlet pipes to ditches and streams
- Culverts and stream crossings
- Areas with exposed soil
- Catch basins in gravel and dirt lots

For more information regarding soil erosion and sedimentation control contact your MDEQ district office. If you would like a copy of the MDEQ Industrial Storm Water Certified Operator and Soil Erosion and Sedimentation Control Inspector Comprehensive Training Manual or the Guidebook of Best Management Practices for Michigan Watersheds visit the MDEQ website.

6. Employee Training

Employee training is a major component of any SWPPP. Employee training is also an integral part of other control measures. In order for the SWPPP to be effective, the employee should be informed about storm water treatment and control measures at the facility. They should understand their role in storm water pollution prevention at the facility. Employee training for storm water issues may be done in conjunction with other training programs.

The purpose of a training program is to teach personnel at all levels of responsibility the components of the SWPPP. When properly trained, personnel are more capable of preventing spills, responding safely and effectively to spills, and recognizing situations that could lead to spills. Employee training as a control measure is an ongoing process, which may take some time to implement. All new employees should be trained as soon as possible. The complexity of the BMPs and the employee turnover will affect how often training sessions will need to be scheduled. The SWPPP shall include a schedule of these periodic training sessions. Most storm water permits require employee training be conducted at least on an annual basis.

To aid in the employee training process, MDEQ has prepared a video titled “Storm Water Employee Training.” This video may be downloaded for use as a part of the facility’s employee training program. In addition to showing the video, the facility will need to discuss site-specific pollution prevention, good housekeeping, and spill cleanup procedures.

The Storm Water Employee Training video is available at:

<https://www.youtube.com/watch?v=IGqvsztguRA&feature=youtu.be>

At a minimum, the employee training program should include:

- *Preventative maintenance and good housekeeping practices*
- *Material Handling and storage procedures*
- *Spill response and reporting procedures should be a component of the spill prevention and response plan*

All employee training must be documented. Training documentation should be kept with all other required storm water program records or the SWPPP should reference the alternate file location.

7. Total Maximum Daily Load (TMDL) Requirements

Water quality standards are state rules established to protect surface waters of the state. In general, the rules establish goals in three areas. The first goal is to protect the uses of lakes and streams, such as for swimming and fishing. The second goal is to maintain safe levels to protect the uses, such as minimum oxygen levels needed for fish to live. The third goal is to protect high quality waters.

In the situation where a waterbody is not meeting water quality standards, MDEQ will establish a Total Maximum Daily Load (TMDL). The purpose of the TMDL process is to determine the pollutant load a lake or stream can handle from all sources, and still meet water quality standards. The TMDL is a plan containing allowable loading limits from point sources and nonpoint sources, and is designed to allow the waterbody to again meet all water quality standards.

NPDES permitted facilities such as industrial storm water permittees are included as point sources when a TMDL is developed. If a facility is located in a watershed with an established TMDL, this information will be included in the facility's Certificate of Coverage or individual permit. This facility must identify the TMDL pollutant in their SWPPP, and describe measures to be taken to prevent or minimize the discharge of the pollutant.

MDEQ staff will assess whether a particular facility may be a significant source of the TMDL pollutant. In some cases, a Short Term Storm Water Characterization Study may be required to obtain more information about the quality of the storm water leaving the facility.

For more information, please see the compliance assistance document, "Understanding Total Maximum Daily Load (TMDL) Requirements as they relate to the Industrial Storm Water Permit". This compliance assistance document is available at:

http://www.michigan.gov/documents/deq/wrd-isw-permit-info-tmdl_398790_7.pdf

A list of waterbodies with TMDL requirements can be found at:

http://www.michigan.gov/deq/0,4561,7-135-3313_3686_3728-12464--,00.html

8. List of Significant Materials Present

A list of significant materials expected to be present in storm water discharges after implementation of nonstructural controls must be included in the SWPPP. The

nonstructural controls already discussed are used to reduce pollutants at the source before they can get into the storm water runoff. These types of nonstructural controls will not always be enough. If significant materials are still present in the storm water discharge from the facility, structural control measures will have to be implemented.

For example, if a facility has sediment present in the storm water discharge from the property the SWPPP should state that it is expected that sediment will be in the storm water discharge. Therefore catch basin inserts are used to remove sediment from the storm water discharges.

Structural Controls

Structural controls are necessary when nonstructural controls are not adequate to prevent contamination of storm water. Structural controls are physical features that control and prevent storm water pollution, which range from preventive measures to treatment systems. Structural controls need to be inspected as part of the comprehensive inspections and some may need to be inspected during the routine inspections.

This section lists some of the more common structural controls and includes a brief description of the device and things to consider when choosing or using these devices.

1. Preventive Measures

There are many preventive measures that may be utilized at industrial sites to limit or prevent the exposure of storm water runoff to contaminants.

a. Signs and Labels

Signs and labels are a good way to identify problem areas, identify hazardous materials, and suggest caution in certain areas. They may also be used to provide instruction on the use of materials and equipment.

Accurate labeling of containers is essential so that personnel can identify the type of material released and respond appropriately.

Signs and labels should be used anywhere that information might prevent significant materials from being released to storm water. They should be visible and easy to read. Signs and labels may provide the following information: names and telephone numbers of people to call in an emergency, direction of drainage lines or ditches and their destination, or information on a specific material. Consult the MIOSHA standards for labeling of hazardous materials.

Signs and labels should be inspected during the comprehensive site inspection so that they can be repaired or replaced when it is necessary.

b. Safeguards

Installing safety posts, barriers, or fences around high risk areas will help to eliminate accidental spills due to human error. Many of these types of structures may already be required under other regulations.

c. Security

A good security system could help prevent an accidental or intentional release of materials as a result of theft, vandalism, or sabotage. A security system could

include lighting, routine patrols, and access control. Security personnel should be trained to search for leaks, spills, or discharges, as well as responding to intruders or disturbances. Routine patrolling and the training of the security personnel should be part of the SWPPP.

d. *Coverings*

Covering is the partial or total enclosure of an area to prevent rain and snow from coming into contact with potential pollutants. Coverings may include tarpaulins, plastic sheeting, roofs, buildings, or dumpster lids.

Coverings are appropriate for outdoor storage and areas where liquids and solids are stored in barrels or other containers. It may not be cost-effective to cover all industrial activities, therefore it is recommended that areas with a greater potential to contaminate storm water runoff be under protective cover. These areas may include but are not limited to:

- Chemical preparation or storage areas
- Vehicle maintenance areas
- Waste storage and handling areas
- Recyclable material storage areas
- Salt/sand piles
- Coal piles

Things to consider when designing an enclosure or covering for an area are:

- Durability of the covering
- Compatibility to the material or activity being enclosed
- Access to materials
- Ease of handling and transferring materials
- Environmental or safety dangers that may be caused by enclosing the area
- Theft and vandalism
- Prevailing winds
- Proximity to drip edges and downspouts
- MIOSHA guidelines

Additional control measures may be used in conjunction with coverings to prevent contact of materials with storm water. These may include curbing, grading, or elevating materials. Impermeable surfaces under a storage area may also be necessary. Routine inspections of temporary coverings are necessary. Inspect coverings frequently for signs of wear and to make sure tarpaulins and plastic sheeting are properly anchored.

2. Diversions

Diversions are structures that are used to divert storm water away from areas that have a greater potential to contaminate storm water runoff or to channel contaminated storm water runoff to a treatment facility or containment area.

a. *Storm Water Conveyances*

Channels, gutters, drains, ditches, and sewers collect storm water runoff and direct its flow. Conveyances can be used to collect storm water from industrial areas and keep it separate from storm water that has not come into contact with these areas.

Note: If a pollutant is spilled, it should not be allowed to enter a storm water conveyance. Contaminated storm water should be directed to a treatment facility.

There are several things to consider when planning storm water conveyances, such as:

- Volume of storm water runoff
- Velocity of storm water runoff
- Drainage patterns of the site

Storm water conveyances can be constructed or lined with many different types of materials, depending upon the use of the conveyance. Conveyances are most easily installed during the construction of a facility.

To ensure that storm water conveyances do not become clogged or damaged they should be inspected routinely

b. Diversion Dikes

Diversion dikes or berms are structures that are used to prevent the flow of storm water runoff onto industrial areas. Diversion dikes are built on slopes just uphill from an industrial area together with some sort of a conveyance, such as a grass lined swale. A storm water conveyance directs the water away from the dike so that water will not pool and seep through the dike.

Earthen dikes should be vegetated to prevent erosion of the dike.

When planning the installation of dikes, the following should be considered:

- Slope of drainage area
- Height of dike
- Volume of runoff it will need to divert
- Type of conveyance that will be used with the dike

c. Grading

This control measure is often used in conjunction with other practices to reduce runoff velocity, divert runoff away from industrial activities, and provide infiltration of storm water. It may also be used to direct contaminated runoff to treatment facilities or containment areas.

3. Containment

Containing spills is a method to minimize exposure of contaminants to storm water runoff. There are many different spill containment methods that include a wide range of complexities and costs.

a. Secondary Containment

Secondary containment structures are required by state or federal regulations for certain materials. The minimum volume of the containment structure will be dictated by the regulation requiring it. It is recommended that structures be large enough to hold at least 100% of the total volume plus sufficient space for

accumulated storm water. It is also recommended that all piping and valves be located within the containment.

Diking is a common form of secondary containment for above ground tanks and material storage areas. Containment dikes are earthen or concrete berms or retaining walls that are designed to hold spills. It is one of the best methods of preventing contamination of storm water as it holds and keeps the spill from contacting storm water outside of the diked area. Containment dikes are most commonly used for controlling large spills or accidental releases from liquid storage tanks.

The material that the secondary containment structure is made of may vary according to the type of fluid the tanks contain. The secondary containment structure may need to be covered with a special liner for some chemicals. The secondary containment structure must be impervious so that it does not leak.

To prevent uncontrolled overflows, containment areas should have a pumping system or vacuum trucks available to remove the spilled materials. If the containment is required by state or federal regulations, the discharge of storm water trapped in the containment area to surface water is permitted only if authorized by the permit. A short term storm water characterization study will be required if the storm water will be discharged to the surface waters of the state. A compliance assistance document regarding short term storm water characterization studies can be found at:

http://www.michigan.gov/documents/deq/wrd-isw-sampling-short-term_398401_7.pdf

If the containment structure is a voluntary pollution prevention measure, then the storm water may be discharged according to the procedures in the SWPPP. If the storm water in the containment area has become contaminated it cannot be discharged as an authorized storm water discharge.

Regularly scheduled inspections of secondary containment structures should be a part of the SWPPP at the facility. Procedures for verifying storm water in secondary containment is not contaminated prior to release must be included in the SWPPP. Visual inspections of water trapped in the containment area should always be conducted prior to discharge. Visible sheens or unnatural turbidity indicate that the storm water in the containment area is contaminated and it should not be discharged to surface waters or to the ground. For materials that are not visibly apparent, chemical analysis may be required to detect contamination. Inspection of containment structures should be conducted soon after storm events to check for cracks in the structure, washouts, and overflows.

b. Curbing

Curbing is a barrier that surrounds an area of concern. Curbing functions in a similar way to diking except it is usually on a smaller scale. It is often used around tanks along with conveyances that would funnel a spill to a larger tank. It is useful in areas where liquid materials are handled and transferred. Areas of the curb that handle vehicle traffic should be reinforced and sloped for vehicles.

Since a curbed area has a much smaller capacity to hold a spill than a diked area, spills should be removed immediately. Curbed containment areas need to be inspected on a regular basis, especially before forecasted storm events and after a storm. Prompt clean-up maximizes the holding capacity and helps to reduce contamination of storm water. Storm water within the curbed area may be discharged per the procedures listed in the SWPPP.

The maintenance of curbing and other secondary containment is important. All cracks or breaks should be patched or the curb or dike in the containment system should be replaced.

Tracking of spilled material out of the curbed area can be a problem. Therefore, the area inside the curbing should be graded so that the spill will flow away from the traffic area. This helps keep the material away from equipment and personnel, facilitating an easier clean-up.

c. *Drip Pans*

Drip pans are used to contain small leaks that may occur at a facility. They should be made of a material that is impermeable and that will not react with the chemicals.

They can be useful in containing drips from leaky valves, pipes, etc. until the leak is repaired. Drip pans can also be an added safeguard when positioned under areas where leaks and drips may occur. This precaution may be very effective in reducing the contamination of storm water that collects in a secondary containment area. By catching the small drips or leaks, the drip pan prevents the larger volume of storm water from becoming contaminated, and makes disposal of the storm water much easier, less costly, and safer for the environment.

Drip pans should be placed where they can be easily removed and cleaned after they are inspected. They should be placed in a stable position so they will not be a safety or environmental hazard.

Drip pans should be inspected regularly so that they can be emptied before they overflow. A clear and easily specified practice of disposal, reuse, or recycling should be in place. Inspections should take place before forecasted storm events, immediately following storm events, and on a regularly scheduled basis so that drip pans do not overflow or develop a leak.

d. *Basins*

Basins are structural controls used to collect storm water at a facility. The three types of basins that are commonly constructed at industrial facilities are detention basins, retention basins and collection basins.

1. **Detention basins** are designed to detain storm water and release it at a controlled rate for flood control. If there is a manually controlled discharge, an accidental release of contaminating material could be contained here thus reducing the potential cleanup costs.

2. **Retention basins** are designed to retain storm water and allow it to evaporate or infiltrate to ground water. Precautions must be taken to keep contaminated storm water out of the retention basin. If contaminated storm water enters the retention basin it may contaminate the ground water. If all storm water from the property enters a retention basin and there is no surface water discharge, a storm water permit is not required.
3. **Collection basins (storage basins)** are structures where large spills or contaminated storm water are contained before clean-up or treatment. They are designed to receive and contain materials from many locations across a facility such as a containment area. Collection basins are not designed to treat contaminated storm water, but to store it until it can be transferred to a treatment facility. They are very useful in areas with high spill potential.
 - Collection basins are designed to contain spills of a specified volume, or a specified size storm event or both. The collection system and basin should be designed to be compatible to the materials that may be transported through and into them. The basin should be impermeable so that contamination of groundwater does not occur.
 - If the collection basin will handle combustible or flammable materials, explosion-proof pumping equipment and controls should be used to prevent explosions or fires. Local safety codes and MIOSHA requirements should be followed.
 - Collection basins/systems must be inspected and maintained regularly. The contents of the basin should be removed after every storm event.

4. Other Structural Controls

a. *Sumps*

Sumps are located in the lowest area within a containment area or collection basin. They are placed so that the rest of the area drains into them, and often contain pumps to remove the liquids. The sump should be made of impermeable materials with a smooth surface so liquids funnel easily to the pump.

Sump pumps should be selected based on the maximum expected discharge rate, the viscosity (thickness) of material, and the distance the material will be pumped. Submersible pumps may be required if they will be in the sump area.

If the sump is located in a truck well, the sump pump should have a manually operated switch. This will prevent releases to the receiving waters if a spill has occurred.

b. *Oil/Water Separators*

Oil/water separators are devices that skim the insoluble oil off of the surface of storm water runoff. These devices need to be maintained regularly and properly to prevent flushing the captured oil into the receiving waters during a rain event. If not properly maintained, they are a source of pollutants. For additional information see the section regarding activity specific controls.

c. *Catch Basins and Inserts*

Catch basins are storm water inlets to the storm sewer system, which contain a sump to capture solids. Catch basin sumps will only capture heavier sediments such as sand and gravel. Suspended clays and silts, dissolved metals, oils and greases, detergents, and many other significant materials will pass directly into the storm sewer system, to be carried untreated to surface waters of the state.

Regular maintenance is required, or the sumps may actually cause a discharge of pollutants during storm events. Unmaintained catch basins may contribute loads of biochemical oxygen demand (BOD) and sediment to the receiving stream. Cleaning should be performed when sumps are half full. The removed sediment may have high levels of pollutants, and typically needs to be landfilled.

In areas with the potential for spills, additional structural controls may be needed. A commonly used control is a catch basin cover that fits tightly over the catch basin's opening. The cover is used during loading or unloading, or during other industrial activities where there is potential for a spill to occur. When the activity has ceased, the cover is then removed so the catch basin can accept flow during a rain or snowmelt event.

Many facilities have installed open/close valves inside of catch basins located in high risk areas. The catch basin valve is moved to the "closed" position during high risk activities to prevent a potential spill from reaching surface waters of the state. If a spill does occur, the catch basin can be vacuumed and cleaned before the valve is moved to the "open" position.

Catch basin inserts are used to trap contaminants that are transported by storm water runoff. Most are designed to fit under the catch basin lid. Some are filter devices used to trap insoluble particles, such as sediments, others have specialized media to remove dissolved contaminants in the storm water.

Consult design specifications of the catch basin insert to determine if it can effectively remove contaminants from the storm water runoff. The frequency of the maintenance will vary depending on the levels of contamination and the design specifications. Similar to catch basin sumps, catch basin inserts will actually contribute loads of pollutants during storm events if they are not properly maintained. For additional information see the activity specific controls section on the Industrial Storm Water webpage.

d. *Oil Pads/Skimbers*

In areas with significant oil spillage, pads can be constructed to collect the contaminated storm water runoff. The storm water runoff can be directed to a collection basin. An oil skimmer can be used to remove oils from the surface of the water in the collection basin.

Discharges from most collection basins are not authorized by the general storm water permit.

e. *Impervious Work Areas*

Impervious work areas are used to prevent soil contamination and allow for easier spill clean-up. An example is a concrete pad used for dismantling automobiles at a salvage yard. Concrete paving is generally preferred to asphalt in areas where hazardous materials are stored or where the potential for a spill exists. Asphalt absorbs organic pollutants and it can be slowly dissolved by some fluids. Paving should be inspected regularly for cracks that could allow contaminants to contact the soil or enter the groundwater.

PERMITTEE RESPONSIBILITIES

The permit describes several permittee responsibilities, so it is important to read the permit language carefully. The following section discusses scenarios that are most common.

Prohibition of Non-Storm Water Discharges

Often, facilities have discharges of water other than storm water. Operators are often unaware that they even exist. Discharges that are not listed in the general storm water permit are not authorized under this permit. These types of discharges are common and contribute to significant pollution of surface water and groundwater. You must determine if you have any of these types of discharges. By signing the Notice of Intent, the applicant is certifying that the facility has no unauthorized discharges.

You may currently have discharges that can be covered under another NPDES permit, be rerouted to a sanitary sewer system (with the approval of the treatment plant operator), or eliminated. In many older facilities, floor drains, drinking fountains, cooling water systems, vehicle wash water, and other wastewater systems were deliberately connected to storm sewer systems. In newer facilities, the same sorts of things can happen accidentally. These sorts of discharges are referred to as illicit connections and must be eliminated.

Examples of unauthorized discharges that may be covered by another NPDES permit include; cooling water, hydrostatic pressure test water, vehicle wash water, treated groundwater, and process wastewater. The discharges from many sand and gravel mining operations, where a pit is dewatered, can be covered by the Sand and Gravel Mining General Permit (MIG490000).

The general storm water permit does not authorize the discharge of water additives without approval from the MDEQ. Water additives include any material that is added to water used at the facility or to a wastewater generated by the facility to condition or treat the water. In the event a permittee proposes to discharge water additives, the permittee shall submit a request to the MDEQ for approval.

It is the responsibility of the permittee to ensure that only authorized storm water is being discharged. However, the permittee may rely on the certified operator for guidance. The proper development, implementation, and evaluation of the SWPPP will ensure that only authorized discharges occur.

To check for non-storm water discharges, one or more of the following dry weather tests may be used:

- Visual Inspection - Inspect each outlet during dry conditions to see if there is a discharge. If there is a discharge during a dry period, it may indicate an illicit connection. Inspect the outlets on several occasions.
- Sewer Map - A review of a plant schematic is another simple method used to determine if there are any illicit connections into the storm water system. A common problem with this method is that facilities often do not have an accurate, up-to-date map. Be sure to confirm the discharge point of all floor drains.
- Dye Testing - Dye testing is done to determine where floor drains and other plumbing fixtures discharge. All projects involving the application of tracer dyes to waters that will discharge to waters of the state must obtain a Rule 97 Certification of Approval by submitting a written request to MDEQ Water Resources Division Surface Water Assessment Section. Rule 97 information can be found at: http://www.michigan.gov/deq/0,1607,7-135-3313_46123-165911--,00.html
- Smoke Testing - Smoke testing is done to determine where a discharge pipe is coming from. Smoke is pumped up the pipe and the tester observes where the smoke is coming from. Notify all building personnel, neighboring building personnel, and the fire department before smoke testing.

There are several non-storm water discharges that can be covered under the general permit. They include:

- Discharges from fire hydrant flushing
- Potable water sources including water line flushing
- Water from fire system testing and firefighting training without burned materials or chemical fire suppressants
- Irrigation drainage
- Lawn watering
- Routine building wash down that does not use detergents or other compounds
- Pavement wash waters where contamination by toxic or hazardous materials has not occurred (unless all contamination by toxic or hazardous materials has been removed) and where detergents are not used
- Uncontaminated condensate from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids
- Springs
- Uncontaminated groundwater
- Foundation or footing drains where flows are not contaminated with process materials such as solvents

These types of discharges and the methods to be used to control them must be identified in the SWPPP. Discharges from firefighting activities are authorized by this permit, but are exempted from the requirement to be identified in the SWPPP.

Plan Updates and Annual SWPPP Review Reports

Once the SWPPP has been implemented, it must be updated regularly. The review must be done annually from the date the SWPPP is completed. MDEQ has created a Storm Water Pollution Prevention Plan Checklist that can be used to review the SWPPP. The checklist may be

downloaded at: http://www.michigan.gov/documents/deq/deq-wrd-stormwate-industrial-SWPPPchecklist_425472_7.doc

Revisions must be made to the SWPPP if it is determined that the information in the SWPPP is no longer current or if the implemented controls are inadequate. This includes any addition of new sources of significant materials, changes in the processes at the facility, changes in drainage patterns or changes in the controls to be used to minimize exposure of such materials to storm water runoff. These changes should be included in the annual report.

The Annual SWPPP Review Report is the written summary of the industrial storm water activities that have occurred in the last year. Be sure to include any spills that may have occurred since the time of the last review, how they were cleaned up, and the changes made to prevent a recurrence of the spill. Most general and individual permits that authorize industrial storm water discharges require that the written report be submitted to the MDEQ on or before January 10th of each year. MDEQ has created a Storm Water Annual Report form that must be submitted in MiWaters on or before Jan 10th of each year. The form must be submitted by an authorized user that has approved certifier status in MiWaters.

The MDEQ or authorized representative may notify the permittee at any time that the SWPPP does not meet minimum requirements. Such notification shall identify why the SWPPP does not meet minimum requirements. The permittee shall make the required changes to the SWPPP within 30 days after such notification from the MDEQ or authorized representative and shall submit to the MDEQ a written certification that the requested changes have been made.

Record Keeping and Reporting

Keeping records and reporting events that occur on-site is an effective way of tracking the progress of the pollution prevention efforts. Reviewing these records can provide some useful information for developing improved controls for problem areas. Record keeping and reporting represent good operating practices because they can increase the efficiency of the facility and the effectiveness of the controls.

All storm water program records must be retained for at least three years.

The SWPPP and associated records shall be retained on-site at the facility which generates the storm water discharge. These records should include inspection reports, maintenance activities, employee training dates, annual reports, and a description of incidents such as spills that can affect the quality of storm water runoff.

In addition to retaining records at the facility, the storm water permits require reporting for some circumstances. If there is noncompliance with the permit or other water quality regulations, the noncompliance must be reported to the MDEQ, Water Resources Division, District Supervisor.

When storm water is discharged to the surface waters of the state, there shall be no violation of the Water Quality Standards in the receiving waters as a result of this discharge. This requirement includes, but is not limited to, the following conditions: The receiving waters shall not have any of the following unnatural physical properties in quantities which are or may become injurious to any designated use: unnatural turbidity, color, oil film, floating solids, foams, settleable solids, suspended solids, or deposits as a result of this discharge.

Noncompliance Notification

In any instance of noncompliance with the requirements of federal or state water quality regulations, the written reporting shall include: a description of the discharge and the cause of noncompliance, the period of noncompliance (dates and times), the steps taken to minimize the impact, and the steps taken to prevent recurrence of the unauthorized discharge. All instances of noncompliance shall be reported as follows:

- Any noncompliance which may endanger health or the environment shall be reported verbally within 24 hours from the time the permittee becomes aware of the circumstances. In addition, a written submission shall also be provided within five days.
- All other instances of noncompliance shall be reported within five days from the time the permittee becomes aware of the noncompliance.

Spill Notification

The permittee shall immediately report any spill or loss of any polluting material which occurs to the surface waters or ground waters of the state unless the permittee has determined that the release is not in excess of the threshold reporting quantities specified in the Part 5 Rules (Rules 324.2001 through 324.2009 of Michigan Administrative Code) by calling the Department at the number indicated on the COC or individual permit, or if notice is provided after regular working hours call the MDEQ's 24-hour Pollution Emergency Alerting System (1-800-292-4706). Within ten days of the release, the permittee shall submit to the MDEQ, Water Resources Division District Supervisor a full written explanation of the cause, discovery, clean-up, and recovery measures taken, preventive measures to be taken, and schedule of implementation. The SWPPP must also be modified to reflect any changes that have occurred at the facility.

Please note that a spill may be considered to be noncompliance with the permit even though it may not be in excess of the threshold reporting quantities specified in the Part 5 Rules.

Short Term Storm Water Characterization Study (STSWCS)

Storm water discharges from mandated secondary containment areas, sites of environmental contamination (Part 201 of the Michigan Act), specific industrial sectors, facilities that discharge to a TMDL designated waterbody or operations that have been designated "significant contributors to pollution" have the potential to cause violation(s) of water quality standards. For this reason, the MDEQ may determine that a STSWCS to evaluate the quality of these discharges is necessary.

If required by the permit, within six months after the effective date of the COC or individual permit, the permittee must submit an approvable STSWCS plan for monitoring and analysis of the storm water discharges to the MDEQ, Water Resources Division District Supervisor in MiWaters.

Upon approval of the STSWCS plan, the permittee shall begin monitoring the authorized discharge as specified in the STSWCS plan. If the MDEQ, Water Resources Division District Supervisor does not take action to approve or comment on the STSWCS plan within 90 days after submittal, and the SWPPP has been fully implemented, the permittee shall begin storm water monitoring in accordance with the STSWCS plan as submitted.

If the STSWCS plan was approved previously it may not need to be resubmitted for approval. However if industrial operations have changed or new information has become available the STSWCS plan shall be resubmitted in MiWaters for approval. If the STSWCS plan is not resubmitted for approval, the monitoring data must be submitted in MiWaters by the date specified in the COC or individual permit.

A compliance assistance document describing how to prepare a STSWCS plan is available at: http://www.michigan.gov/documents/deq/wrd-isw-sampling-short-term_398401_7.pdf

Expiration and Reissuance

An NPDES permit is valid for a maximum of five years. The Certificate of Coverage (COC) or individual permit will state the expiration date. The COC expiration date is listed near the bottom of the COC and on an individual permit it is listed on the first page. Typically the permit expiration date for COCs is April 1 and for individual permits is October 1.

If the permittee wishes to continue a discharge authorized under a permit beyond the permit expiration date, the permittee shall submit in MiWaters an application to the MDEQ, WRD, Permits Section. The application must be submitted six months prior to the expiration date (typically October 1). This gives the Water Resources Division an opportunity to reevaluate operational and monitoring requirements and effluent limits. A person holding a valid COC or individual permit under an expired permit shall continue to be subject to the terms and conditions of the expired permit until the permit is terminated, revoked, or reissued.

Michigan has developed a strategy for scheduling permit reissuance known as the "5-Year Basin Plan." This is a timetable for reissuance of permits based on receiving water-bodies. A receiving water is the river, stream or lake that "receives" a particular discharge. It is ideal to simultaneously evaluate all permits allowing discharge to a particular receiving water or watershed. A complete cycle of reissuance occurs every 5 years, with approximately 20% of the permits being reissued each year. The "5-Year Basin Plan" was established with the objective of establishing the most efficient plan for water quality monitoring and permit reissuance.

If a facility submits a complete application prior to the expiration date listed on the COC or individual permit, coverage will be extended until the permit coverage is reissued by the department.

A map of the Watershed Basins can be found at: http://michigan.gov/deq/0,1607,7-135-3313_3682_3713-10412--,00.html

Permit Modifications

Transfer of Ownership or Control

- If there is any change in control or ownership of operations at a facility, the permittee shall notify the succeeding owner or controller of the existence of this permit by letter. A copy shall be submitted in MiWaters to the District Supervisor of the Water Resources Division thirty days prior to the actual transfer of ownership or control.
- A Transfer of Coverage form must be submitted in MiWaters by the new owner.

Name or Address Change

- Submit a Transfer of Coverage form in MiWaters.

Change in Discharge

- Submit the applicable application in MiWaters.

Termination of General Permit Coverage

When all storm water discharges associated with industrial activity that are authorized by the permit are eliminated or industrial activity has ceased, the permittee may submit a NPDES Permit Notice of Termination application in Miwaters to the MDEQ, Water Resources Division District Supervisor to end authorization to discharge under the permit. All significant materials that are exposed or likely to be exposed to storm water runoff need to be eliminated from the property before the Certificate of Coverage or individual permit is terminated. It is the responsibility of the permittee to request termination in a timely manner to allow permit termination prior to January 1st. A permittee that has storm water permit coverage as of January 1st will be required to pay the annual permit fee.

Active industrial facilities that have eliminated exposure of all significant materials may request COC termination by submitting an application for No Exposure Certification in Miwaters. The no exposure exclusion is conditional. Therefore, if there is a change in circumstances that causes exposure of industrial activities or materials to storm water, the operator is required to comply immediately with all requirements of the storm water program, including obtaining a permit.

Any permittee that is authorized to discharge storm water from areas of industrial activity on January 1 of a given year shall be assessed an annual discharge fee. It is strongly recommended that permit termination requests be submitted to the MDEQ by December 1 in order to process the termination before January 1.

Individual Permit Required by the MDEQ

The MDEQ may require an individual permit if:

- Unlawful pollution cannot be adequately guarded against with the requirements of the general permit.
- The discharger is not complying or has not complied with the conditions of the permit or schedules in the COC.
- A change has occurred in the availability of demonstrated technology or practices for the control or abatement of waste applicable to the point source discharge.
- Categorical effluent standards or limitations are promulgated for point source discharges of storm water.
- The MDEQ determines that the criteria under which the general permit was issued no longer apply.

Management Requirements

Duty to Comply

It is the duty of the permittee to comply with all the terms and conditions of the general permit. Any noncompliance with the terms and conditions of the general permit constitutes a violation of Act 451 and is subject to enforcement, termination of coverage, coverage under an individual permit, and fines and penalties under Act 451.

Operator Certification

The permittee shall have the waste treatment facilities under the direct supervision of an operator certified at the appropriate level (industrial storm water certified operator) for the facility certification by the Department, as required by Section 3110 and 4104 of the Michigan Act.

Facilities Operation

The permittee shall, at all times, properly operate and maintain all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes adequate laboratory controls and appropriate quality assurance procedures.

Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to the surface waters or ground waters of the state resulting from noncompliance with any conditions specified in this permit including, but not limited to, such monitoring as necessary to determine the nature and impact of the discharge in noncompliance.

Containment Facilities

The permittee shall provide facilities for containment of any accidental losses of oil or other "polluting materials" in accordance with the relevant statute(s).

Waste Treatment Residues

Residuals (i.e. solids, sludges, biosolids, filter backwash, scrubber water, ash, grit, or other pollutants or wastes) removed from or resulting from treatment or control of wastewaters, including those that are generated during treatment or left over after treatment or control has ceased shall be disposed of in an environmentally compatible manner and according to applicable laws and rules. Such disposal shall not result in any unlawful pollution of the air, surface waters or ground waters of the state.

Right of Entry

The permittee shall allow the MDEQ, or any agent of the MDEQ, upon the presentation of credentials, to conduct inspections at the facility, access records required to be kept as a condition of this permit, and to sample any discharge.

STORM WATER DISCHARGES NOT AUTHORIZED BY THE INDUSTRIAL STORM WATER GENERAL PERMITS

The following storm water discharges are not authorized by the Industrial Storm Water General Permits:

- Storm water discharges associated with industrial activities that are permitted by an existing NPDES individual permit or a different general permit.
- Storm water discharges associated with construction activities as identified under 40 CFR, Section 122.26(b)(14)(x) (such activities require permit-by-rule coverage).
- Storm water discharges that have been determined by the MDEQ to be contributing to unlawful pollution that cannot be adequately guarded against under the requirements of the general permits for storm water discharges.
- Storm water discharges associated with industrial activity from inactive mining, inactive landfill, or inactive oil and gas operations occurring on federal lands where an operator cannot be identified.
- Storm water discharges for which federal effluent limitation guidelines exist. The following industrial categories have storm water effluent limitation guidelines in the CFR:
 - Cement manufacturing (40 CFR, Part 411)
 - Feedlots (40 CFR, Part 412)
 - Fertilizer manufacturing (40 CFR, Part 418)
 - Petroleum refining (40 CFR, Part 419)
 - Phosphate manufacturing (40 CFR, Part 422)
 - Steam electric (40 CFR, Part 423)
 - Coal mining (40 CFR, Part 434)
 - Mineral mining and processing (40 CFR, Part 436)
 - Mine dewatering water (40 CFR, Part 436)
 - Ore mining and processing (40 CFR, Part 440)
 - Asphalt emulsion (40 CFR, Part 443, Subpart A)
- Storm water discharge to ground waters.
- Storm water from a new facility discharging to wild or wilderness rivers or waterbodies within the boundaries of national lakeshores or national parks that are designated “outstanding state resource waters” pursuant to Michigan water quality standards.

POLLUTION PREVENTION

Reduce

Reducing the amount of materials used is an obvious dollar saver and will decrease the potential of pollutants being discharged into storm water runoff. Reduction of hazardous material use can be achieved by substituting them with less toxic products.

Reuse

Reusing materials is also cost-effective, and once implemented can greatly reduce the amount of waste generated from industrial facilities. Reusing solvents, packaging materials, and even paper

can have a positive impact on our environment. For further information, call the MDEQ, Waste Management and Radiological Division.

Recycling

When properly set up, recycling of materials will become a habit that will help reduce the amount of polluting materials from entering storm water runoff. Recycling areas may be as simple as covered containers to selectively hold wastes, or they may include liquid waste drums, waste oil tanks, or large covered dumpsters that can be transported to a transfer station or recycling facility.

Retired Engineer Technical Assistance Program (RETAP)

Retired professionals are available through the RETAP to assist businesses and institutions in Michigan with pollution prevention and energy savings. RETAP is a nonprofit corporation providing the technical services for the program. It is staffed by dedicated retired engineers and scientists with extensive industrial experience in waste reduction and on-site assistance. Businesses of 500 employees or fewer in the state and institutions of any size are eligible.

- This program provides confidential and non-regulatory on-site pollution prevention assessments for Michigan businesses and institutions, free of charge.
- Teams of RETAP professionals review operations for potential waste reduction strategies and opportunities; including source reduction, reuse, recycling, and energy efficiency.
- Written, confidential reports identify pollution prevention options and contain specific recommendations to save money, increase efficiency, reduce need for costly waste disposal and treatment, reduce liability, and promote a positive public image.
- All reports are sent directly to the company by the RETAP staff),
- There is no obligation to implement the recommendations however significant cost savings can be achieved from employing pollution prevention techniques. Follow-up with companies assisted through RETAP has shown thousands of dollars of annual cost savings.
- Information on RETAP can be found on the MDEQ website at http://www.michigan.gov/deq/0,4561,7-135-70153_70155_3585_4848-11899--,00.html.

WHAT TO EXPECT DURING A MDEQ STORM WATER INSPECTION

The MDEQ is required by the EPA to conduct routine inspections of permitted facilities. Usually these inspections are unannounced. The industrial storm water inspection consists of three parts, a tour of the facility, a review of the Storm Water Pollution Prevention Plan and a review of the associated records. In addition, the MDEQ inspector will be evaluating other non storm water discharges.

During the indoor and outdoor tour the MDEQ inspector will focus on areas that impact the storm water discharge from the property. It is important to understand during this training that not all industrial facilities are the same, so in a sense, each inspection is unique. In general, the MDEQ inspector will evaluate the following areas:

- Loading, unloading, and other material handling areas
- Outdoor and indoor industrial storage areas, including secondary containment structures, pallets, drums, etc.

- Outdoor manufacturing or processing areas, including areas where significant dust or particulates would be generated
- Discharge areas for vents, stacks, and other air emission controls
- On-site waste disposal areas
- Maintenance and cleaning areas for vehicles, machines, and equipment
- Areas of exposed and erodible soils
- Point source discharges
- Structural controls designed to treat, divert, or isolate storm water
- Internal floor drains will be inspected to ensure that they are not connected to the storm sewer system or surface waters.

In addition, the inspector will evaluate any other areas of the facility where storm water may contact significant materials.

Once the indoor and outdoor inspection is completed the SWPPP will be audited against the language in the general storm water permit. The SWPPP must be onsite and records should be well organized and kept in an area that is easily accessible.

A review of the associated records includes: all inspection reports, preventative maintenance reports, annual reports, employee storm water training records, and any other applicable documents. Remember, the storm water permit requires that the facility keep all documentation for at least three years.

Once the inspection is complete, the MDEQ inspector will conduct a closing meeting in which compliant and non-compliant items noted during the inspection will be discussed. Typically, a letter will be sent by the MDEQ inspector to the facility describing the items discussed during the closing meeting. In most cases the facility will be required to submit a written response to the MDEQ describing what has or will be done to comply with the inspection letter.

A video detailing what to expect during a MDEQ industrial storm water inspection can be viewed at: <https://www.youtube.com/watch?v=mTjtHGWPIW&feature=youtu.be>

SUMMARY

As an industrial storm water certified operator, you are an important link between industrial activities and the protection of our state's water resources. Your responsibilities include identifying conditions at the site which could contribute pollutants to storm water runoff, determining if structural and nonstructural controls are implemented to correct these conditions, and conducting inspections to ensure the facility is in compliance with the storm water permit. Your assistance will help your company verify appropriate records are kept, and that they properly respond to spills that may occur at the facility. Your concerted efforts in these areas will ultimately prevent negative impacts on storm water runoff and protect the invaluable surface waters of our state.

Appendix A

Review Exercise & Review Exercise Answers

**INDUSTRIAL STORM WATER CERTIFIED OPERATOR TRAINING
FOR INDUSTRIAL SITES
REVIEW EXERCISE**

This is a review exercise to help you determine how well you understood the information in this manual. The review exercise also includes information from the visual assessment webinar, the 3 visual assessment tutorials, and the activity specific controls that should be viewed on the MDEQ industrial program page at: http://www.michigan.gov/deq/0,1607,7-135-3313_3682_3716-24018--,00.html. If you need some help with a question, the number to the right of the question tells you on which page in the manual you will find the necessary information. Questions based on the visual assessment webinar or tutorials and the activity specific controls will indicate the section of the presentation the information was provided.

Once you have completed the exercise, check your answers against the key that has been provided in the following section.

The following questions are from the Industrial Storm Water Certified Operator Training Manual. Pages where the answers can be viewed have been provided.

- | | |
|--|--------|
| 1) Under natural conditions the majority of rain water that falls to the ground _____. | Page 6 |
| 2) The introduction of pollutants to storm water most <u>commonly</u> occurs when industrial facilities allow operating procedures and industrial materials to _____. | Page 6 |
| 3) The best way to prevent contamination of storm water is _____. | Page 6 |
| 4) The highest percentage of pollutants in storm water runoff occurs in the first few minutes that storm water runs off. This is called the _____. | Page 6 |
| 5) Organic enrichment of storm water runoff from sources such as food processing, airport deicing, antifreezes, and sewage create addition oxygen demand in lakes and streams. Much of the demand is due to bacteria feeding on these materials. The increased oxygen demand can lead to _____, which is a common cause of fish kills. | Page 7 |

6) The addition of nitrogen and phosphorus to storm water runoff can result in algal blooms and excessive growth of aquatic plants in fresh water systems such as lakes and streams. In fresh water systems _____ is the main cause of excessive plant and algal growth. Page 7

7) Sediment is one of the most widespread pollutants in surface water. Many _____ attach to finer sediment particles. Sediment can also be destructive to aquatic systems by covering and damaging habitat. Page 7

8) Michigan law requires that anyone who discharges liquid wastes to surface waters of the state must have their pollution control measures under the supervision of a _____. Page 9

9) If there is a construction activity at an industrial facility that disturbs one or more acres of land or the soil disturbance is within 500 feet of a water body, the owner of the property will need to apply for a _____ permit. In addition if the soil disturbance will become five or more acres in size the property owner will need to submit the Notice of Coverage application to the MDEQ, Water Resources Division. Page 9&10

10) _____ permits are not site specific and contain the minimum requirements for protecting water quality. Page 10

11) The _____ is a document that authorizes the discharge of storm water under a general storm water permit. Page 10

12) _____ permits are site specific and contain requirements such as regular sampling, monitoring, end of pipe treatment or effluent limits. Page 10

<p>13) There are two types of industrial storm water general permits in Michigan they are Storm Water from Industrial Activity and Storm Water with _____ _____.</p>	<p>Page 10</p>
<p>14) A facility that has the industrial storm water general permit with required monitoring or special use areas is required to conduct a _____ _____.</p>	<p>Page 10</p>
<p>15) An annual fee will be assessed to all facilities that have permitted storm water discharges. All facilities that have authorization to discharge storm water on _____ will be responsible for the annual fee.</p>	<p>Page 11</p>
<p>16) Industrial facilities are identified in the federal storm water regulations by _____ and narrative description.</p>	<p>Page 11</p>
<p>17) The surface water that receives the point source discharge is called the _____ . This information must be included on the Notice of Intent (NOI) application when applying for the storm water discharge coverage.</p>	<p>Page 11</p>
<p>18) Surface waters of the state include _____, _____, _____, and _____.</p>	<p>Page 11</p>
<p>19) A _____ is any discernible, confined, and discrete conveyance that discharges storm water into surface waters. Examples include, but are not limited to, pipes, ditches, channels, tunnels, conduits, conduits, or anything that conveys storm water into surface waters.</p>	<p>Page 11</p>
<p>20) A discharge point that directs waste water, including storm water to a storm sewer is called a/an _____.</p>	<p>Page 12</p>

21) A discharge point that directs waste water, including storm water to surface waters of the state is called a/an _____
_____.

Page 12

22) A sewer system in which the storm water is kept separate from sanitary sewage and discharges directly into a surface water body is called a _____
_____.

Page 12

23) A sewer system in which the sanitary sewage and the storm water are combined and are directed to a wastewater treatment plant is called a _____
_____.

Page 13

24) For industrial facilities that are regulated by the federal regulations and there is a point source discharge, but there is no exposure of industrial materials, the no exposure certification must be submitted every _____
in MiWaters.

Page 14

25) The application for storm water permit coverage must be signed by the _____
_____.

Page 14

26) _____ is a state-of-the-art, comprehensive, web-based permitting and compliance database.

Page 14

27) The focus of MiWaters is _____ and _____.

Page 14

28) List the 5 Notice of Intent (NOI) requirements that are certified by the signature on the Notice of Intent.

Page 15

- 1.
- 2.
- 3.
- 4.
- 5.

<p>29) Certain types of forms and reports, particularly those administered under the federal NPDES program, require that the user submit a _____ that must be approved by the department before these forms and reports can be submitted in MiWaters.</p>	<p>Page 15</p>
<p>30) Existing facilities that are required to have industrial storm water permit coverage that do not have industrial storm water permit coverage are in violation. To resolve the violations the facility must enter into a _____.</p>	<p>Page 16</p>
<p>31) The application for reissuance of industrial storm water permit coverage must be submitted _____ in MiWaters prior to the expiration of the Certificate of Coverage or individual NPDES permit.</p>	<p>Page 16</p>
<p>32) Portable industrial facilities also need to submit the _____ in MiWaters for permit coverage.</p>	<p>Page 16</p>
<p>33) If the portable industrial facility is to be moved to another satellite location the permittee must notify the MDEQ of the relocation in writing, at least _____ prior to start up at the new location.</p>	<p>Page 16</p>
<p>34) The industrial storm water certified operator at the facility shall have _____ over the facility's storm water treatment and control measures.</p>	<p>Page 17</p>
<p>35) The comprehensive inspection can only be conducted by a/an _____.</p>	<p>Page 17</p>
<p>36) Only a/an _____ may assess the storm water sample collected for conducting the visual assessment.</p>	<p>Page 17</p>
<p>37) The Industrial Storm Water Certified Operator must be at the facility</p>	<p>Page 17</p>

_____.

38) The SWPPP must be reviewed and signed by the permittee and a/an _____.

Page 17

39) To become certified a person must attend an Industrial Storm Water Certified Operator training class and submit the _____ within 90 days of attending the training class.

Page 18

40) The Industrial Storm Water Certified Operator certification is valid for _____ years.

Page 18

41) To renew certification the Industrial Storm Water Certified Operator must _____ and _____ by August 31 of the year their certification expires.

Page 18

42) The MDEQ may revoke the certificate of a person who has practiced fraud or _____ or been negligent in discharge of his/her duties.

Page 18

43) The Storm Water Pollution Prevention Plan (SWPPP) is a written procedure intended to _____ and to reduce the amount of significant materials in the storm water discharge.

Page 18

44) The SWPPP must be designed _____. It should be user friendly, readable and to the point.

Page 19

45) The storm water permit requires that 13 categories of items be identified on the site map. List the 13 items that must be included on the site map.

Page 19

- 1.
- 2.
- 3.

- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.
- 11.
- 12.
- 13.

46) Significant materials are _____
_____.

Page 20

47) The SWPPP shall describe the ways in which the significant materials are
or have _____.

Page 20

48) Another method of evaluating sources of contamination is to sample storm
water discharges. Monitoring storm water discharges may be a practical
method of evaluating the effectiveness of the Storm Water Pollution Prevention
Plan. The first flush should be sampled, since the storm water runoff will
usually have the highest concentrations of pollutants within the first
_____ of discharge.

Page 21

49) If the Certificate of Coverage (COC) or permit authorizes a storm water
discharge from Sites of Environmental Contamination or secondary
containment structure a _____
_____ must be submitted to the district supervisor for approval.

Page 21&22

50) Routine inspections should focus on _____

_____.

Page 22

51) Routine inspections are an integral component of the preventative maintenance program and are the responsibility of the industrial storm water certified operator. At most facilities, it is recommended that the routine inspections be performed and documented at least once every _____.

Page 22

52) Routine housekeeping inspections may be combined with routine _____ inspections.

Page 23

53) What should be included in the in the good housekeeping practices of the SWPPP?

Page 23&24

54) The comprehensive inspection must be performed _____ or on an alternatively approved schedule. The comprehensive inspection should focus on the whole facility.

Page 24

55) The comprehensive inspection should include a review of _____ and any other paperwork associated with the storm water program.

Page 24

56) Proper material handling and storage procedures in place at a facility can _____ the potential for the accidental release of materials that can cause contamination of storm water runoff.

Page 25

57) Avoid storing liquids near _____.

Page 26

58) Developing _____ procedures is a very important part of the material handling and storage procedures. Establishing such procedures along with proper employee training can reduce accidental releases.

Page 25

59) Detailed cleanup procedures should include the location of _____, clean up equipment, identification of cleanup personnel, and phone numbers of appropriate personnel.

Page 25

60) During non-business hours if there is a spill or a release to waters of the state, someone at the facility must _____
_____ at 1-800-292-4706.

Page 26

61) During regular business hours if there is a spill or a release to waters of the state, someone at the facility must _____
_____.

Page 26

62) List the four common areas prone to soil erosion and sedimentation.

Page 27

- 1.
- 2.
- 3.
- 4.

63) Employee training must be implemented _____.

Page 27

64) The more informed employees are about what is expected of them, the more effective the storm water program. At a minimum the employee training program should include: Internal spill and response procedures,
_____ and _____
_____.

Page 27

- 65) The _____ is the process used to determine how much pollutant load a lake or stream can handle from point and nonpoint sources. Page 28
- 66) A list of _____ expected to be present in the storm water discharges after implementation of nonstructural controls must be included in the SWPPP. Page 28
- 67) _____ are physical features that control or prevent storm water pollution. Page 29
- 68) Structural controls need to be inspected as part of the _____. Some may need to be inspected as part of the routine inspections. Page 29
- 69) To prevent uncontrolled overflows, containment areas should have a pumping system or vacuum trucks available to remove the spilled materials. If the containment is required by state or federal regulations, the discharge of storm water trapped in the containment area to surface water is permitted _____. Page 32
- 70) _____ basins are designed to retain storm water and allow it to evaporate or infiltrate. Page 34
- 71) _____ are lower areas within a containment structure from which liquid is collected. Page 34
- 72) Oil water separators are controls that remove _____ off the surface of the storm water runoff. Page 34
- 73) Catch Basin inserts are used to _____ that are transported by storm water runoff. Page 35

<p>74) Discharges not listed in the general permit or individual permit are _____ under these permits. Examples include vehicle wash water, noncontact cooling water, and other process waste waters.</p>	<p>Page 36</p>
<p>75) It is the responsibility of the _____ to ensure that only authorized storm water is being discharged.</p>	<p>Page 36</p>
<p>76) The storm water permits require the SWPPP to be reviewed _____ after it is developed and maintain a written summary of the review. In addition the SWPPP needs to be modified when there are changes at the facility.</p>	<p>Page 37</p>
<p>77) The annual review of the Storm Water Pollution Prevention Plan (annual report) must be submitted on or before _____ each year in MiWaters.</p>	<p>Page 38</p>
<p>78) All storm water program records must be retained for _____.</p>	<p>Page 38</p>
<p>79) Receiving waters shall not have any of the following unnatural physical properties in quantities which are or may become injurious to any designated use: unnatural _____, _____, _____, floating solids, foams, settleable solids, suspended solids, or deposits as a result of the discharge.</p>	<p>Page 38</p>
<p>80) Any noncompliance which may endanger health or the environment shall be reported verbally within _____ from the time the permittee becomes aware of the circumstances.</p>	<p>Page 39</p>
<p>81) Facilities that discharge storm water from required secondary containment to surface waters of the state must conduct a _____.</p>	<p>Page 39</p>

82) The Short Term Storm Water Characterization Study Plan must be submitted to the Water Resources Division District Supervisor for approval within _____ of the individual permit or Certificate of Coverage issuance.

Page 39

83) NPDES Permit coverage is valid for a maximum of _____.

Page 40

84) If there is a change in control or ownership at a storm water permitted facility the new owner must submit a completed _____ form in MiWaters.

Page 40

85) _____ must be removed from the facility before the authorization to discharge is terminated. If the authorization to discharge is terminated prior to this the facility will be in violation of the storm water regulations.

Page 41

86) The MDEQ, Water Resources Division is required to conduct facility inspection as part of the National Pollutant Discharge Elimination System program. Inspections are usually _____.

Page 44

87) During the inspection, internal floor drains will be inspected to ensure they are not connected to the _____.

Page 45

88) The inspection consists of three parts, a tour of the facility (both inside and outside), a review of the Storm Water Pollution Prevention Plan and a review of the associated records. A review of the associated records includes:
_____, _____,
_____, employee storm water training records and any other applicable documents.

Page 45

89) Once the inspection is complete, the MDEQ, Water Resources Division staff will conduct a closing meeting in which the compliant and non-compliant items will be discussed. After the inspection, a letter will be sent describing _____.

Page 45

The following questions are from the Visual Assessment Webinar and the 3 Visual Assessment Tutorials found on the Industrial Storm Water Webpage. Answer locations are provided.

90) The visual assessment must be conducted within _____ of the control measure observations portion of the comprehensive inspection.

Assessment
Webinar or
Tutorial #1

91) The written procedures for conducting the visual assessment of the storm water discharging from the discharge points at a facility must be developed within _____ of the issuance or reissuance of the storm water permit coverage.

Visual
Assessment
Webinar or
Tutorial #1

92) The written procedures for conducting the visual assessment must include a _____ given to personnel other than the Industrial Storm Water Certified Operator to qualify them to collect storm water samples.

Visual
Assessment
Webinar or
Tutorial #1

93) The storm water sample collected for conducting the visual assessment must be collected within _____ of the start of the discharge from a storm event and at least _____ from the previous discharge.

Visual
Assessment
Webinar or
Tutorial #2

94) A visual assessment shall be conducted of the storm water discharge at each storm water _____.

Visual
Assessment
Webinar or
Tutorial #2

95) Documentation of the Visual Assessment includes full color photographic evidence of the storm water sample _____.

Visual
Assessment
Webinar or
Tutorial #2

96) When the visual assessment is conducted at a facility, the storm water discharging from a facility may be collected by an _____, _____, or _____.

Visual
Assessment
Webinar
Tutorial #2

97) The visual assessment of the storm water sample by an Industrial Storm Water Certified Operator must be conducted within _____ of the sample collection.

Visual
Assessment
Webinar or
Tutorial #3

98) The visual assessment of the storm water sample collected at each discharge point must be documented by a _____ and the completion of the _____ by an Industrial Storm Water Certified Operator.

Visual
Assessment
Webinar or
Tutorial #3

The following questions are from the Activity Specific Controls section located on the industrial program page of the storm water website.

99) Regular maintenance of oil/water separators is necessary. During the routine inspections, the inspector should _____.

100) Whenever possible vehicle maintenance should be performed inside. At many facilities some maintenance will be performed outside. During the routine inspection, the inspector should _____.

101) Proper storage for paints and solvents includes storing materials _____, in a neat and orderly manner. It is preferable to store materials out of the weather.

102) If the loading and unloading operations are in close proximity to a catch basin inlet, the inlet must be protected. List three options for protecting the inlet.

- 1.
- 2.
- 3.

103) Locate tanks _____ surface waters, storm sewer inlets, and other sensitive areas.

104) After a rain event, the inspector should check for _____ in the secondary containment. This is one method of checking the structural integrity of the secondary containment.

105) Waste products and scrap materials have a high potential to contaminate storm water runoff. Therefore, controls for outside waste disposal areas must be developed and implemented. Keep waste receptacle and scrap bins under a _____ or use a temporary cover.

106) Best management practices or controls must be used, if dewatering occurs at the facility. The dewatering discharges must meet water quality standards in the receiving waters. If the discharge is _____ than the receiving waters, cease the discharge.

107) _____ bind with sediment forming a larger sized particle called a flock. The flock can then be removed from the water.

108) Straw bales are _____ for keeping sediment or other particulate materials out of catch basins.

109) _____ oils are not removed by oil water separators and most catch basin inserts.

110) Dismantle vehicles on an _____ pad or in a building.

111) At an auto salvage facility or vehicle maintenance facility, old batteries should be stored _____ if stored outside.

112) Vehicular fluids such as used oil, gasoline, antifreeze etc. should not be stored outside without the proper controls. Fluid storage areas must be _____.

The answers to the last two questions below can be found on the Industrial Storm Water Webpage and your Certificate of Coverage or Individual Permit.

113) List your local MDEQ, WRD district office and the contact information for the Industrial Storm Water Program district staff person.

- District Office _____
- Industrial Storm Water Contact for your County _____
- Industrial Storm Water Contact Phone Number _____

114) List your Certificate of Coverage number and the NPDES general permit number or individual permit number.

- Certificate of Coverage Number **MIS** _____
- Industrial Storm Water General Permit Number **MIS** _____
- Individual Permit Number **MI** _____

INDUSTRIAL STORM WATER CERTIFIED OPERATOR REVIEW ANSWERS

1. Infiltrates the ground or evaporates
2. Become exposed to storm water
3. Through pollution prevention
4. First flush
5. Oxygen depletion
6. Phosphorus
7. Pollutants
8. Certified Operator
9. Soil Erosion and Sedimentation Control
10. General
11. Certificate of Coverage
12. Individual
13. Required Monitoring or Special Use Areas
14. Short Term Storm Water Characterization Study
15. January 1
16. Standard Industrial Classification (SIC) Code
17. Receiving Waters
18. Rivers
Lakes
Streams
Wetlands
19. Point Source Discharge
20. Point of Discharge
21. Outfall
22. Separate Storm Sewer System

23. Combined Sewer System
24. 5 years
25. Principal executive officer or designee
26. MiWaters
27. Permitting and compliance
28. A Storm Water Pollution Prevention Plan (SWPPP) has been developed for the facility.
The facility has an industrial storm water certified operator.
There are no unauthorized discharges from the facility.
Nonstructural Controls have been implemented.
Structural Controls are in place or will be in place according to the dates in the SWPPP.
29. Certifier Agreement Form
30. General administrative consent order
31. 6 months
32. Notice of Intent
33. 10 days
34. Supervision
35. Industrial Storm Water Certified Operator
36. Industrial Storm Water Certified Operator
37. On a regular basis
38. Industrial Storm Water Certified Operator
39. Certification fee
40. 5
41. Attend a recertification class
Pay the recertification fee
42. Falsification
43. Reduce exposure of significant materials to storm water runoff
44. To work at your facility
45. Buildings and other permanent structures

Storage or disposal areas for significant materials
Secondary containment structures and description of what they contain
Storm water discharge points
The location of the storm water and non-storm water inlets contributing to each discharge point
Location of NPDES permitted discharges other than storm water
Outlines of drainage areas contributing to each discharge point
Structural runoff controls or storm water treatment facilities
Areas of vegetation
Areas of exposed and/or erodible soils
Impervious surfaces
Name and location of receiving waters
Areas of known or suspected impacts on surface waters as designated under Part 201 of the Michigan Act

46. Any material that can degrade or impair water quality
47. The reasonable potential to contaminate storm water runoff
48. 30 minutes
49. Short Term Storm Water Characterization Study Plan
50. Areas that have a greater potential to contaminate storm water
51. 2 weeks
52. Preventative maintenance
53. Operation and maintenance procedures
Material storage and inventory procedures
Employee participation
54. Quarterly
55. Routine inspection reports
56. Minimize
57. Drains
58. Spill response
59. Spill kits
60. Contact the MDEQ Pollution Emergency Alert System (PEAS)
61. Contact a MDEQ, Water Resources Division staff person at the District Office

62. Outlet pipes to ditches and streams
Culverts and stream crossings
Areas with exposed soil
Catch basins in gravel and dirt lots
63. Annually
64. Preventative maintenance
Good housekeeping procedures
65. Total maximum daily load (TMDL)
66. Significant materials
67. Structural controls
68. Comprehensive inspection
69. Only if authorized by the permit
70. Retention
71. Sumps
72. Insoluble oils
73. Trap contaminants
74. Not authorized
75. Permittee
76. Annually
77. January 10
78. 3 years
79. Turbidity
Color
Oil film
80. 24 hours
81. Short term storm water characterization study
82. 6 months
83. 5 years

84. Transfer of Coverage
85. All significant materials that have the potential to be exposed to storm water runoff
86. Unannounced
87. Storm sewers or surface waters
88. Inspection reports
Preventative maintenance reports
Annual reports
89. The items discussed during the closing meeting
90. 1 month
91. 6 months
92. A copy of the employee training
93. 30 minutes
72 hours
94. Discharge point
95. Against a white background
96. Industrial Storm Water Certified Operator
Qualified Person
Automated sampling device
97. 48 hours
98. Colored photograph
Visual Assessment Report Form
99. Check the fluid levels
100. Check for leaking oil or other fluids
101. Off the ground
102. Cover the catch basin inlet
Place absorbent materials around the catch basin inlet
Close the shutoff valve if the drain is equipped with a shutoff valve.
103. Away from
104. Accumulated storm water

105. Rain-proof shelter
106. More turbid
107. Polyacrylamides (PAM's)
108. Not effective
109. Soluble
110. Impervious
111. Inside a covered container
112. Inspected for leaks routinely
113. Answers will be different for each county
114. Answers are specific to each facility that has Industrial Storm Water permit coverage

APPENDIX B
RELATED WEBSITES

RELATED WEBSITES

The MDEQ Storm Water Website:

<http://www.michigan.gov/deqstormwater>

MDEQ MiWaters Webpage:

http://www.michigan.gov/deq/0,4561,7-135-3313_72753---,00.html

Sample Storm Water Pollution Prevention Plan:

http://www.michigan.gov/documents/deq/wrd-isw-swppp-sample_398408_7.pdf

Construction Storm Water Certified Operator Training Manual:

http://www.michigan.gov/deq/0,4561,7-135-3311_4113-81197--,00.html

Guidebook of Best Management Practices for Michigan's Watersheds

http://www.michigan.gov/deq/0,4561,7-135-3313_3682_3714-118554--,00.html

List of Approved Total Maximum Daily Loads (TMDL)

http://www.michigan.gov/deq/0,1607,7-135-3313_3686_3728-12464--,00.html

Part 4 Rules, Water Quality Standards, of Act 451:

http://w3.lara.state.mi.us/orr/Files/AdminCode/302_10280_AdminCode.pdf

Part 5 Rules, Spillage of Oil and Polluting Materials, of Act 451:

http://www.michigan.gov/deq/0,1607,7-135-3313_23420---,00.html

Spill Prevention Control and Countermeasures (SPCC) website

<http://www.epa.gov/emergencies/content/spcc/index.htm>

Part 21 Rules, Wastewater Discharge Permits, of Act 451

http://w3.lara.state.mi.us/orr/Files/AdminCode/309_10287_AdminCode.pdf

EPA storm water website

<http://www.epa.gov/npdes/npdes-stormwater-program>

EPA Industrial Fact Sheet Series website

<http://www.epa.gov/npdes/stormwater-discharges-industrial-activities#factsheets>

Metal Working Guidance Document

http://www.michigan.gov/documents/deq/deq-ead-tas-metalwrk_320863_7.pdf

Universal Waste Management Guidance Document

http://www.michigan.gov/documents/deq/deq-ead-tas-univwaste_320878_7.pdf

Power Washing Guidance Document

http://michigan.gov/documents/deq/deq-ead-tas-powrwash_320867_7.pdf

Salt Storage Guidance Documents

http://www.michigan.gov/documents/deq/deq-ess-p2tas-commercialssaltguidance_267027_7.pdf

http://www.michigan.gov/documents/deq/deq-ess-p2tas-bulksaltbrineguidance_267024_7.pdf

Scrap Metal Bins and Roll Off Boxes Guidance Document

http://michigan.gov/documents/deq/Scrap_Metal_And_Roll_Off_Bins_4_6_06_404112_7.pdf

Used Oil Guidance Document

http://www.michigan.gov/documents/deq/deq-ead-tas-usedoil_320882_7.pdf

Standard Industrial Classification (SIC) / North American Industrial Classification System (NAICS) Conversion Information

<http://www.census.gov/eos/www/naics/concordances/concordances.html>

Michigan Retired Engineer Technical Assistance Program

http://www.michigan.gov/deq/0,4561,7-135-70153_70155_3585_4848-11899--,00.html

Michigan Guidebook to Environmental, Health, and Safety Regulations

<http://www.michigan.gov/deq/0,4561,7-135-3308-15820--,00.html>

APPENDIX C
Common Terms

Common Terms

Best Management Practices (BMPs)

Control measures used to prevent or mitigate pollution. They can be structural or nonstructural control measures.

Certificate of Coverage (COC)

A document issued by the MDEQ that authorizes a discharge under a general permit.

Composite Sample

A sample that is made up of multiple grab samples that have been thoroughly mixed together.

Critical Materials

Materials listed in Rule 9 of the Part 5 rules, Spillage of Oil and Pollution Materials, of Act 451, as polluting materials that require secondary containment.

Designated Use

At a minimum, all surface waters of the state are designated and protected for all of the following uses:

- (a) Agricultural
- (b) Navigation
- (c) Industrial water supply
- (d) Warm water fishery
- (e) Other indigenous aquatic life and wildlife.
- (f) Partial body contact recreation.
- (g) Fish consumption

Discharge Point

The location where the point source discharge is directed to surface waters of the state or to a separate storm sewer. It includes the location of all point source discharges where storm water exits the facility, including outfalls and points of discharge.

District Supervisor

The District Supervisor of the MDEQ, Water Resources Division, as identified in a COC accompanying the general permit.

Existing Facility

A facility that is or has been involved in industrial operations.

Grab Sample

A single sample taken at neither a set time nor flow.

Illicit Connection

These are connections of sanitary or process water discharges to the storm water discharge system.

Individual Permit

A site-specific NPDES permit.

Inlet

A catch basin, roof drain, conduit, drain tile, retention basin riser pipe, sump pump, or other point where storm water or wastewater enters into a closed conveyance system prior to discharge off site or into waters of the state.

New Facility

A facility located on a newly developed or redeveloped site that is ready to begin industrial operations.

Noncontact Cooling Water

Water that is used for cooling that does not come into direct contact with any raw material, intermediate by-product, waste product, or finished product.

Nonstructural Control Measure

Measures that do not require the construction of a physical barrier.

Outfall

The location of a point source discharge where storm water is discharged directly to surface waters of the state.

Point of Discharge

The location of a point source discharge where storm water is discharged directly into a separate storm sewer system.

Point Source Discharge

A discharge from any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, or rolling stock. Changing the surface of the land or establishing grading patterns on land will result in a point source where runoff from the site is ultimately discharged to waters of the state.

Polluting Material

Oil and any material, in solid or liquid form, identified as polluting material under the Part 5 rules of Act 451.

Pretreatment

The act of reducing the amount of pollutants, eliminating pollutants, or altering the nature of pollutant properties to a less harmful state prior to discharge into a storm or sanitary sewer. The reduction or alteration can be by physical, chemical, or biological processes, process changes, or by other means. Dilution is not considered pretreatment unless expressly authorized by a National Pretreatment Standard for a particular industrial category.

Secondary Containment

A unit, other than the primary container in which the significant materials are packaged or held, that is required by state or federal law to prevent the escape of significant materials by gravity into sewers, drains, or otherwise directly or indirectly into any sewer system or to the surface or ground waters of this state.

Separate Storm Sewer System

A system of drainage, including roads, catch basins, curbs, gutters, parking lots, ditches, conduits, pumping devices, or man-made channels, where storm water is not combined with sanitary wastewater.

Significant Material

Any material that could degrade or impair water quality.

Structural Control Measures

Control measures that require a physical feature used to prevent or treat storm water pollution.

Total Maximum Daily Load or TMDL

The amount of pollutant load a water body such as a lake or stream can assimilate and still meet Water Quality Standards.

Water Quality Standards

State adopted and Environmental Protection Agency (EPA) approved water quality levels that were established to protect the designated uses of the waters of the state. The Water Quality Standards can be found in the Part 4 Rules developed under Part 31 of Act 451 of the Public Acts of 1994, as amended, being Rules 323.1041 through 323.1117 of the Michigan Administrative Code.

APPENDIX D

Acronyms

LIST OF ACRONYMS

BMP	Best Management Practices
CFR	Code of Federal Regulations
COC	Certificate of Coverage
EPA	Environmental Protection Agency
MDEQ	Michigan Department of Environmental Quality
MDNR	Michigan Department of Natural Resources
MIOSHA	Michigan Occupational Safety and Health Act
MS4	Municipal Separate Storm Sewer System
NEC	No Exposure Certification
NOI	Notice of Intent Application
NPDES	National Pollutant Discharge Elimination System
PIPP	Pollution Incident Prevention Plan
SPCC	Spill Prevention Control and Countermeasures plan
STSCS	Short Term Storm Water Characterization Study
SWPPP	Storm Water Pollution Prevention Plan
TMDL	Total Maximum Daily Load
TOC	Transfer of Coverage
WRD	Water Resources Division