



MARSHALL UNIVERSITY



ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM

Date of Preparation:

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SECTION 1. PURPOSE/INTENT.

The purpose of this program is to provide for the health, safety, and general welfare of the students, staff, and faculty of Marshall University through the regulation of non-storm water discharges to the storm drainage system to the maximum extent practicable as required by federal and state law. This program establishes methods for controlling the introduction of pollutants into the municipal separate storm sewer system (MS4) in order to comply with the requirements of the National Pollutant Discharge Elimination System (NPDES) permit process. The objectives of this program are:

1. To regulate the contribution of pollutants to the MS4 by stormwater discharges.
2. To prohibit illicit connections and discharges to the MS4.
3. To initiate the Plan of Action

SECTION 2. DEFINITIONS.

For the purposes of this program, the following shall mean:

Best Management Practices (BMPs). Schedules of activities, prohibitions of practices, general good housekeeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to storm water, receiving waters, or storm water conveyance systems. BMPs also include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.

Clean Water Act. The federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.), and any subsequent amendments thereto.

Construction Activity. Activities subject to NPDES Construction Permits. These include construction projects resulting in land disturbance of one acre or more. Such activities include but are not limited to clearing and grubbing, grading, excavating, and demolition.

Hazardous Materials. Any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Illegal Discharge. Any direct or indirect non-storm water discharge to the storm drain system, except as exempted in Section 8 of this ordinance.

Illicit Connections. An illicit connection is defined as either of the following:

- Any drain or conveyance, whether on the surface or subsurface that allows an illegal discharge to enter the storm drain system including but not limited to any conveyances that allow any non-storm water discharge including sewage, process wastewater, and wash water to enter the storm drain system and any connections to the storm drain system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved by an authorized enforcement agency or,

- Any drain or conveyance connected from a commercial or industrial land use to the storm drain system that has not been documented in plans, maps, or equivalent records and approved by an authorized enforcement agency.

Municipal Separate Storm Sewer System (MS4). The system of conveyances (including sidewalks, roads with drainage systems, streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) owned and operated by Marshall University and designed or used for collecting or conveying storm water, and that is not used for collecting or conveying sewage.

National Pollutant Discharge Elimination System (NPDES) Storm Water Discharge Permit. Means a permit issued by EPA (or by a State under authority delegated pursuant to 33 USC § 1342(b)) that authorizes the discharge of pollutants to waters of the United States, whether the permit is applicable on an individual, group, or general area-wide basis.

Non-Storm Water Discharge. Any discharge to the storm drain system that is not composed entirely of storm water.

Person. Any individual, contractor, student, staff, or faculty.

Pollutant. Anything which causes or contributes to pollution. Pollutants may include, but are not limited to: paints, varnishes, and solvents; oil and other automotive fluids; non-hazardous liquid and solid wastes and yard wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects, ordinances, and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from constructing a building or structure; and noxious or offensive matter of any kind.

Premises. Any building, lot, parcel of land, or portion of land whether improved or unimproved including adjacent sidewalks and parking strips.

Storm Drainage System. Publicly-owned facilities by which storm water is collected and/or conveyed, including but not limited to any roads with drainage systems, municipal streets, gutters, curbs, inlets, piped storm drains, pumping facilities, retention and detention basins, natural and human-made or altered drainage channels, reservoirs, and other drainage structures.

Storm Water. Any surface flow, runoff, and drainage consisting entirely of water from any form of natural precipitation, and resulting from such precipitation.

Storm Water Management Plan. A document which describes the Best Management Practices and activities to be implemented by a person or business to identify sources of pollution or contamination at a site and the actions to eliminate or reduce pollutant discharges to Storm Water, Storm Water Conveyance Systems, and/or Receiving Waters to the Maximum Extent Practicable.

Wastewater. Any water or other liquid, other than uncontaminated storm water, discharged from a facility.

SECTION 3. APPLICABILITY.

This program shall apply to all water entering the storm drain system generated on any developed and undeveloped lands in the permitted area.

SECTION 4. RESPONSIBILITY FOR ADMINISTRATION.

Marshall University shall administer, implement, and enforce the provisions of this program.

SECTION 5. ULTIMATE RESPONSIBILITY

The standards set forth herein and promulgated in this program are minimum standards: therefore this program does not intend or imply that compliance will ensure that there will be no contamination, pollution, or unauthorized discharge of pollutants.

SECTION 6. DISCHARGE PROHIBITIONS.

6.1. Prohibition of Illegal Discharges.

No person shall throw, drain, or otherwise discharge, cause, or allow others under its control to throw, drain, or otherwise discharge into the MS4 any pollutants or waters containing any pollutants, other than stormwater. The following categories of non-stormwater discharges are prohibited *unless* the stated conditions are met:

(1) Discharges from potable or non-potable water sources, including but not limited to; hyperchlorinated water line flushing, pipeline hydrostatic test water and other water discharges with a potential to violate water quality standards. For planned discharges to the MS4, the discharge shall be dechlorinated to a concentration of 0.1 ppm or less, pH adjusted, if necessary, and volumetrically and velocity controlled to prevent resuspension of sediments in the MS4.

(2) Discharges from lawn watering and other irrigation runoff. These shall be minimized through; at a minimum, public education activities.

(3) Street, parking lot and sidewalk wash water, water used to control dust, and routine external building wash down, that does not use detergents. The permittee shall reduce these discharges through; at a minimum, public education activities. To avoid washing pollutants into the MS4, permittees must minimize the amount of street wash and dust control water used. At active construction sites, street sweeping must be performed prior to washing the street.

6.2. Prohibition of Illicit Connections.

(1) The construction, use, maintenance or continued existence of illicit connections to the storm drain system is prohibited.

(2) This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.

(3) A person is considered to be in violation of this program if the person connects a line conveying sewage to the MS4, or allows such a connection to continue.

(4) Improper connections in violation of this program must be disconnected and redirected, if necessary, to the sanitary sewer system.

(5) Any drain or conveyance that has not been documented in plans, maps or equivalent, and which may be connected to the storm sewer system, shall be located. Such notice will specify a reasonable time period within which the location of the drain or conveyance is to be determined, that the drain or conveyance be identified as storm sewer, sanitary sewer or other, and that the outfall location or point of connection to the storm sewer system, sanitary sewer system or other discharge point be identified. Results of these investigations are to be documented for reporting purposes.

SECTION 7. CONSTRUCTION ACTIVITY DISCHARGES.

Any activity that requires a construction NPDES stormwater discharge permit (1 acre or greater) shall comply with all provisions of such permit.

SECTION 8. NOTIFICATION OF SPILLS.

Notwithstanding other requirements of law, as soon as any person responsible for any known or suspected release of materials which are resulting or may result in illegal discharges or pollutants discharging into storm water, the storm drain system, or waters of the United States, said person shall take all necessary steps to ensure the discovery, containment, and cleanup of such release. In the event of such a release of hazardous or non-hazardous materials said person shall immediately notify the MU Physical Plant 304-696-6682.

Failure to provide notification of a release as provided above is a violation of this program.

SECTION 9. VIOLATIONS, ENFORCEMENT, AND PENALTIES

It shall be against this program for any person to violate any provision or fail to comply with any of the requirements of this program. Any person who has violated or continues to violate the provisions of this program, may be subject to the enforcement actions outlined in the Progressive Discipline Policy section of the Environmental Health and Safety Policy manual or may be restrained by injunction or otherwise abated in a manner provided by law.

SECTION 10. PLAN OF ACTION

10.1 Reporting and Tracking Procedure

Reports concerning suspected illicit discharges will be received by the Physical Plant. Their phone number and email address will be advertised annually in the campus newspaper and is posted permanently on Marshall University's stormwater webpage.

Staff responsible for receiving phone calls will be trained on the characteristics of illicit discharges so they will be able to differentiate them from other water problems on campus and how to issue work orders concerning them. After notification has been received of a suspected illicit discharge or pollution concern a work order will be initiated and sent to the Environmental Health and Safety (EHS)

department. An investigation of the site will be done within 48 hours after receiving the work order. An inspection form will be completed and additional investigation will be decided at the time of inspection. The work order will be completed and logged in the Maximo system for documentation purposes.

Table 1: Types of Potential IDDE Complaints	
Typical Call-in Indicators	Likely Source
Sewage smell, or floatables from storm drain outfall during dry weather flow	Storm and sanitary sewer cross-connection
Small (<6" diameter) pipe directly discharging to receiving water	Straight pipe discharge from home or business
Greatly discolored or unnatural smelling liquid (often hydrocarbons) flowing from or pooling on property or from outfall below property	Dumping
Sewage smell; extra green vegetation; saturated Ground	Storm and sanitary sewer cross-connection
Muddy water; sediment deposits, up stream construction site	Poor erosion and sediment control

Table 1: Examples of potential calls/complaints about illicit discharges or pollution concerns.

10.2 Characterization of Illicit Discharges Procedure

Visual observations will be conducted annually or quarterly depending on the permitted frequency. If no flow is observed then the site will not be screened until the next permitted frequency. If flow is observed then follow-up monitoring is required. Samples will be taken to help identify the source of water. Bacterial analysis will be the first test to be accomplished. The results of the test will determine whether additional testing is required. Potential parameters included in additional testing are as follows but not limited to:

- pH
- Ammonia
- Detergents-Surfactants, Fluorescence, or Surface Tension
- Turbidity
- Discoloration
- Odors

The analysis will be evaluated upon completion to determine possible sources such as groundwater, natural spring or an illicit discharge. If the flow is from an illicit discharge the tracing process will begin to find and eliminate the source.

In case a flow is accessible to the student, staff, and faculty and public health is questioned the flow will be monitored immediately and the area will be closed until the matter is resolved.

10.3 Sampling Protocol

All samples, whether for compliance or illicit discharge detection, shall use the same techniques. A field log notebook will be used to record data from the sampling event and the notebook is where the sample number will originate. The details in the notebook will involve the sample number, date, location, weather, analysis, and receiving lab. The location will be the description of the site sampled. If it is for compliance it will be the catch basin at 19th Street and College Avenue but if it is for a suspected illicit discharge the description should have the area and where the sample was actually taken (i.e. at an outfall, in the stream, or within the storm drain pipe network).

The sample bottles' material and preserve, if needed, will be according to the appropriate method number stated in the permit. Bottles will be new and supplied by the contracted lab with preserve. Bottles will be labeled with a lab number, date, time, location, sampler initials, preserve, and analysis required.

All suspected illicit discharges will be sampled during dry weather with a minimum of 48 hours since the previous precipitation event. This will help to avoid flowing outfalls caused by stormwater or groundwater infiltration.

Stormwater samples shall be collected during the "first flush" of rainfall runoff, at least 20 minutes, but no more than 50 minutes after rainfall of at least 0.1 inches has begun, preceded by a period of dry weather of at least 48 hours.

- I. The samplers will be wearing latex or nitrile gloves to prevent contamination of samples and to protect themselves.
- II. All samples (stormwater or suspected illicit discharges) will be collected via a stainless steel cup.
- III. Sampling jars will be filled to the neck of the bottle to allow room for stirring.
- IV. Bottles will be properly labeled as stated and placed in a cooler or refrigerator to cool to 4° C.

A "chain of custody" supplied by the contract lab will be filled out and a copy will be kept onsite. It will have the identical information the sampling bottle has in addition to what goes in the field notebook.

The contract lab will pick up the samples and leave a signed copy of the "chain of custody." The samples will be taken to the contract lab for analysis.

10.4 Inspections

Outfall/manhole reconnaissance (Appendix A) will be conducted twice per month. A two member team will walk drainage areas in the selected sections/sub-watershed. All sections/sub-watersheds on campus will receive reconnaissance once per year and our priority areas will be inspected once per quarter.

Outfalls, pipes, and catch basins will be screened (Appendix A) for any dry weather flow during the outfall/manhole reconnaissance is being conducted. All inspections will use the same inspection form that consists of date, time, location, weather information, site characterization, description, flow description, etc.

10.5 Tracing

All suspected illicit discharges will be promptly investigated using the storm sewer map to help identify the location and source of the discharge. The investigation will begin at the site of observance and work will be done progressively up the trunk and manholes will be observed/tested along the way. Cameras and samples will be done if needed to conclude the source of the suspected illicit discharge.

All options will be evaluated, the preferred option selected, and the source of the illicit discharge will be eliminated.

10.6 Removing the Source of the Discharge

In the event that a discharge is caused by something that cannot be stopped immediately, Marshall will immediately start the process (work orders, etc.), to remove the cause of the discharge. For instance, if a sewer line is broken and raw sewage is flowing into the storm system, an emergency work order will be initiated. In the event that the discharge is coming from a site off campus, the City of Huntington will be notified immediately; the notification will be properly documented and maintained on campus at the Physical Plant. All of Marshall's activities to inspect and remove illicit discharges will be documented on a spreadsheet and updated on a quarterly basis.

10.7 Training

Marshall will train all staff responsible for field assessments on the identification and the reporting and responding procedures of illicit discharges. Marshall will also train administrative staff who support field staff on how to administer the IDDE program. Marshall will also train other field staff who may come into contact with illicit discharges through their field work. Training will occur annually.

10.8 Program Review

The IDDE program shall be reviewed annually to ensure it is effective and updated with other current policies implemented. Marshall will consider input from the staff, students, and contractors/vendors in addition to tracking the number and type of spills or illicit discharges identified and inspections made annually to ensure it is effective in finding, remediating and preventing illicit discharges.

SECTION 11. PRIORITY AREAS

Priority areas are locations likely to have illicit discharges. The areas considered priority on campus are diesel generators, trash compactors, and grease receptacles. These locations are to be inspected quarterly to ensure no spills have occurred and for permit compliance. The generators are inspected for functional purposes every pay period (twice a month) so an inspection sheet (Appendix A) will be completed during one inspection for documentation purposes and the grease and trash compactors will be inspected during another time.

APPENDIX A

OUTFALL RECONNAISSANCE INVENTORY/ INSPECTION FIELD SHEET

Section 1: Background Data

Section:		Outfall ID:	
Today's date:		Time (Military):	
Investigators:		Form completed by:	
Temperature (°F):	Rainfall (in.):	Last 24 hours:	Last 48 hours:
Latitude:	Longitude:	GPS Unit:	
Camera:		Photo #s:	
Land Characterization (Check all that apply):			
<input type="checkbox"/> Grass		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Impervious		<input type="checkbox"/> Priority Area	
<input type="checkbox"/> Other:			
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
<input type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other:	<input type="checkbox"/> Circular <input type="checkbox"/> Single <input type="checkbox"/> Elliptical <input type="checkbox"/> Double <input type="checkbox"/> Box <input type="checkbox"/> Triple <input type="checkbox"/> Other: <input type="checkbox"/> Other:	Diameter/Dimensions: _____	In Water: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other:	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other:	Depth: _____ Top Width: _____ Bottom Width: _____	
In-Stream	(applicable when collecting samples)			
Flow Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS			
PARAMETER		RESULT	EQUIPMENT
Flow #1	Volume		Bottle
	Time to fill		Sec
Flow #2	Flow depth		Tape measure
	Flow width	____' ____"	Tape measure
	Measured length	____' ____"	Tape measure
	Time of travel		Stop watch
Temperature			°F
pH			pH Units
Ammonia			mg/L

Section 4: Physical Indicators for Flowing Outfalls Only

Are any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if PRESENT	DESCRIPION	RELEATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1-Faint	<input type="checkbox"/> 2-Easily detected	<input type="checkbox"/> 3-Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1-Faint colors in sample bottle	<input type="checkbox"/> 2-Clearly visible in sample bottle	<input type="checkbox"/> 3-Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See Severity	<input type="checkbox"/> 1-Slight cloudiness	<input type="checkbox"/> 2-Cloudy	<input type="checkbox"/> 3-Opaque
Floatable -Does Not Include Trash!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1-Few/slight; origin not obvious	2-Some; indications of origin (e.g. possible suds or oil sheen)	<input type="checkbox"/> 3-Some; origin clear (e.g. obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if PRESENT	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	

Section 6: Overall Outfall Characterization

Unlikely Potential (presence of two or more indicators) Suspect (one or more indicators with a severity of 3) Obvious

Section 7: Data Collection

1. Sample for the lab? Yes No

2. If yes, collected from: Flow Pool

3. Intermittent flow trap set? Yes No If Yes, type: OBM Caulk dam