

**Facilities Management Department**  
**Standard Operating Procedure**  
**Illicit Discharge Detection and Elimination**  
**Program**

**Purpose**

Millersville University is working jointly with the Pennsylvania Department of Environmental Protection (PADEP) to reduce the quantity of stormwater and increase the quality of stormwater runoff. The University is located within US Environmental Protection Agency (EPA) designated urbanized areas; therefore, the University is required to have a Small Municipal Separate Storm Sewer System (MS4) permit. As required under the National Pollutant Discharge Elimination System (NPDES) Phase II regulations, the University is to develop stormwater management programs. This program requires that each MS4 permittee develop an *Illicit Discharge Detection and Elimination Program (IDDEP)* which is detailed below. This plan should enable detection and elimination of non-stormwater discharges, including illegal dumping, into the MS4.

**Background**

Discharges from MS4s often include wastes and wastewater from non-stormwater sources. A study conducted in 1987 in Sacramento, California, found that almost one-half of the water discharged from a local MS4 was not directly attributable to precipitation runoff. A significant portion of these dry weather flows were from illicit and/or inappropriate discharges and connections to the MS4.

Illicit discharges enter the system through either direct connections (e.g., wastewater piping either mistakenly or deliberately connected to the storm drains) or indirect connections (e.g., infiltration into the MS4 from cracked sanitary systems, spills collected by drain outlets, or paint or used oil dumped directly into a drain). The result is untreated discharges that contribute high levels of pollutants, including heavy metals, toxics, oil and grease, solvents, nutrients, viruses, and bacteria to receiving bodies of water. Pollutant levels from these illicit discharges have been shown in EPA studies to be high enough to significantly degrade receiving water quality and threaten aquatic, wildlife, and human health. Examples of illicit discharges are: sanitary wastewater, effluent from septic tanks, car washes, improper oil disposal, radiator flushing disposal, laundry grey water, spills from roadway accidents, and improper disposal of auto and house hold chemicals.

**Program Requirements**

Recognizing the adverse effects illicit discharges can have on receiving waters, the Phase II Final Rule requires an operator of a regulated small MS4 to develop, implement and enforce an illicit discharge detection and elimination program. This program must include the following:

- Storm Map - A storm sewer system map, showing the location of all outfalls and the names and location of all waters of the United States that receive discharges from those outfalls;
- Ordinance - Through an ordinance, or other regulatory mechanism, a prohibition (to the extent allowable under State, Tribal, or local law) on non-stormwater discharges into the MS4, and appropriate enforcement procedures and actions;
- Education - The education of public employees, businesses, and the general public about the hazards associated with illegal discharges and improper disposal of waste; and
- Program - A plan to detect and address non-stormwater discharges, including illegal dumping, into the MS4.

**Storm Map**

The creation of a storm sewer system map is meant to demonstrate a basic awareness of the intake and discharge areas of the system. It is needed to help determine the extent of discharge of dry weather flows, the possible sources of dry weather flows, and the particular water bodies these flows may be affecting. The University's map includes all outfalls and surface waters, as well as the entire storm sewer system including roads, inlets, pipes,

swales, catch basin, channels, basins and any other BMPs that are part of the University's storm sewer system. The map will be updated on an annual basis as additional construction and maintenance activities occur. Detailed storm drain maps are not provided to the general public due to safety issues.

## **Ordinance**

The University does not have the legal authority to write and enforce an ordinance as suggested by the NPDES Phase II standard protocol. The University is simply a land owner for this requirement and relies on the Ordinances of Millersville Borough.

## **Education**

Outreach to the target audience regarding ways to detect and eliminate illicit discharges is another integral part of this program. The education portion will clarify the University's expectations and requirements regarding activities of contractors and employees when on University property. This outreach may include:

- Developing informational materials and guidance documents for specific audiences (e.g., students, faculty, staff, contractors, visitors, etc.). These materials are located on the website.
- Placing ads for general public regarding illicit discharges.
- Using an inlet marking program for storm drains; and
- Supporting Environmental Health and Safety training for hazardous chemicals such as oils and pesticides.

## **Program**

In accordance with the regulations, the University's program section is comprised of seven (7) sections as described below.

### 1) Procedure for identifying priority areas:

These are areas with a higher likelihood of illicit discharges, illicit connections or illegal dumping. Priority areas may include areas with older infrastructure, a concentration of high-risk activities, or past history of water pollution problems. All regulated outfalls in the University are to be visually screened for dry weather flow one (1) time during the permit cycle. Given the size of the campus, all outfalls in the University could be screened on the same day. Additional outfall screenings are necessary if the initial inspection indicates potential for the presence of pollutants, or if biological/chemical testing indicates pollutants are present.

### 2) Procedure for screening outfalls:

The University has over        miles of storm drains. Using its map, Facilities Management Department staff visually screen outfalls during dry weather at least one (1) time during the permit cycle. For areas where there were past problems or areas with continual dry weather flow, outfalls are to be screened annually. Dry weather is considered to be at least 48 hours without a rain event. If dry weather flow is present during the outfall inspection, the discharge and surrounding area should be visually screened for color, odor, turbidity, sheen, floating or submerged solids, and adverse effects of nearby plants and animals. Should the visual inspection indicate that an illicit discharge may be occurring, the dry weather flow is to be tested for appropriate biological and/or chemical parameters. Biological and chemical testing parameters may vary and are to be appropriate for the suspected pollutant (i.e., testing for fecal coliform where a sanitary sewer cross connection is suspected). Common parameters for dry weather flow which may contain pollutants include, but are not limited to: pH, conductivity, E. Coli bacteria, fecal coliform bacteria, metals, suspended solids, dissolved solids, oils, ammonia, detergents, chlorine and fluoride. The IDD&E Manual developed by the EPA and the Center for Watershed Protection is to be used as guidance. All outfall inspection information should be recorded on the Outfall Reconnaissance Inventory/Sample Collection form (see appendix), even if no dry weather flow is present.

Additional outfall screenings may be necessary based on the results of the first inspection, or if biological/chemical testing indicates pollutants are present.

Laboratory analysis is to be required for some biological and chemical testing parameters (i.e. fecal coliform). Personnel conducting outfall screenings are to be aware of all QA/QC procedures for the use of field test equipment and for collecting samples for off-site analysis, such as sampling technique, storage of the sample, and holding times prior to conducting outfall screenings.

If dry weather flow is not present, sampling and testing is not required.

Outfall screening records are to be retained for inclusion in the University's periodic MS4 report.

### 3) Procedure for identifying the source:

When an illicit discharge when a contaminated flow is detected at a regulated small MS4 outfall occurs, Facilities Management Department staff begins to trace the source of water using the University's comprehensive maps. The University has all utilities mapped. One reason is that flow is frequently found to be from another broken utility such as a water line.

After determining the drainage area to the outfall, the following procedures may be utilized as needed to track an illicit discharge to its source:

- (a) Storm Drain Investigation: Using the University's storm sewer map, field crews begin at the outfall and follow the storm sewer upstream. Depending on the extent of the drainage area, multiple sections of the storm sewer system may need to be investigated for a particular outfall. Manholes and/or inlets are to be inspected for indicators of pollution while following the storm sewer for indicators of pollution. Biological and/or chemical sampling is to be performed as needed at reasonable locations upstream of the outfall to isolate the source of the illicit discharge.
- (b) On-Site Investigations: To pinpoint the exact source of an illicit discharge within the storm sewer network, additional testing may be necessary including dye testing, video testing, or smoke testing. The University should select the appropriate testing method based on drainage area, frequency of the illicit discharge, location, and property accessibility.

For additional information regarding the tracking of illicit discharges, University personnel should reference Illicit Discharge Detection and Elimination- A Guidance Manual for Program Development and Technical Assessments (Center for Watershed Protection & University of Alabama, October 2004).

### 4) Procedure for eliminating an illicit discharge.

Methods used to remove/correct the illicit connections will be site specific. If the source of the illicit discharge is the responsibility of the University (i.e. a University owned sanitary sewer pipe), appropriate repairs must be completed to eliminate the source of pollution. If the source of the illicit discharge is the responsibility of an adjacent property owner, the University shall notify the appropriate Authority Having Jurisdiction.

### 5) Procedure for program documentation, evaluation and assessment:

As a final step, all actions taken under the plan will be documented. Doing this will illustrate that continuous progress is being made to eliminate illicit discharges and connections. This data will also be included as one of the measurable goals achieved in the required annual report. This information documented will include: number of outfalls screened; any complaints received and corrected; the number of discharges and quantities of flow eliminated; and the number of dye tests conducted.

### 6) Reporting illicit discharges:

When an illicit discharge is reported to the University, appropriate personnel will conduct a site visit to determine if an illicit discharge is present. If an illicit discharge has occurred, the University is to identify the source per the procedures. In all cases, whether an illicit discharge was confirmed or not, a field report is to be completed providing the date, location, and field observations and be included with the MS4 periodic report.

NOTE: The following activities have been determined to have negligible flows/discharges to be considered an illicit discharge.

- Water line flushing;
- Landscape irrigation;
- Rising ground waters;
- Uncontaminated ground water infiltration;
- Uncontaminated pumped ground water;
- Discharges from potable water sources;
- Foundation drains;
- Air conditioning condensation;
- Springs;
- Water from crawl space pumps;
- Footing drains;

#### APPENDIX

- DEP Field Screening Guidance
- Citizen Complaint – Illicit Discharge Reporting Form
- Outfall Reconnaissance Inventory/Sample Collection Form