University of Nebraska Lincoln

Safe Operating Procedure

(Revised 9/19)

STORM WATER – ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE)

Introduction
In accordance with the permit issued for UNL's small municipal separate storm sewer system (SMS4) by the Nebraska Department of Environment and Energy (NDEE), UNL must develop and implement a program to detect and eliminate illicit discharges to the storm sewers on City and East Campuses. While a complete Illicit Discharge Detection and Elimination (IDDE) program has several parts, this SOP is primarily directed at that component which EPA and NDEE typically refer to as "public education."

This SOP provides a short narrative on the definition of "illicit discharges," followed by examples of illicit discharges and prevention measures, and finally instructions for action to take in response to suspected or known illicit discharges.

Definition of Illicit Discharges
In short, an "illicit discharge" is defined as any discharge to a storm sewer that is not composed entirely of storm water (i.e., rain water and snow melt) or otherwise allowed under the condition of a State-issued permit. Pollutants in illicit discharges may include sediments, heavy metals, toxic chemicals, oil and grease, solvents, excess nutrients, and harmful microorganisms. Examples of illicit discharges include but are not limited to effluent from septic tanks or sewage cross-connections, vehicle wash water, laundry wastewater, chemical releases, cooling tower discharges, discharges of sediments or other potential pollutants from construction sites, and automobile oil/grease.

Illicit discharges are considered "illicit" because, unlike sanitary sewers, storm sewers discharge pollutants directly to lakes and streams. Sanitary sewers are connected to complex treatment facilities that clean the water of pollutants prior to discharge.

Illicit discharges may enter the storm sewers through direct connections (i.e., piping either mistakenly or deliberately connected to the storm drains) or indirect connections (i.e., infiltration from cracked sanitary systems, spills collected by drain inlets, or wastes dumped directly into a drain).

On UNL City Campus, storm sewers discharge to Antelope Creek. On UNL East Campus, storm sewers discharge to Dead Man's Run. Anything that enters UNL's storm sewer system eventually finds its way to one of these water bodies and can contribute to environmental degradation. It is important to note that these receiving waters are already impaired for E. coli and ammonia, so any discharge that contributes these pollutants is of even greater concern. At UNL, the most likely source of these pollutants is animal waste.

Potential Sources and Control Measures
Whether at home or work, members of the campus community can be good stewards of the environment by following the simple strategies outlined below. More detail regarding institutional policies, procedures, and strategies that are protective of water quality can be found in the Appendix to this SOP.

- Wash vehicles and equipment at facilities designed for that purpose (e.g., car wash). See EHS SOP, ***Vehicle/Equipment Washing*** for additional information.
- Maintain vehicles and equipment to eliminate fluid leaks. Avoid "topping off" the tank when fueling to minimize the potential for spills due to over-filling.
- Contact EHS for chemical disposal services. Guidance on disposal of a variety of waste types is available in numerous SOPs published on the EHS website.
- Use trash receptacles provided throughout campus. Do not litter.
- Avoid power-washing equipment, structures, tools, etc., outdoors and in areas where drains are not connected to the sanitary sewer system. If thought to be necessary, consult with EHS prior to conducting this activity to develop procedures to minimize pollutants loading to the environment.
- Store chemicals, fertilizers, de-icers, oils, greases, and other potential pollutants in an area protected from precipitation and in a manner to prevent migration of releases or leaks to surface waters and storm sewer drains.
- Observe UNL procedures for spill/release pre-planning and response, as described in the following EHS SOPs and as applicable to your situation:
    - ***Preplanning for and Responding to Chemical Spills***
    - ***Spill and Exposure Response for Biohazardous Materials (including Recombinant and Synthetic Nucleic Acids)***
    - ***Oil Spill/Release Preparation & Response.***
- Pick up after your pets.
- Never intentionally direct any type of discharge to a storm sewer without having the appropriate permit and control measures in place.
- Promptly report suspected illicit discharges or suspected failures/needed repairs to storm water structural controls or any component of the storm sewer conveyance system (e.g., pipes, inlets, catch basins, open channels, etc.) (see next section).

Illicit Discharge Avoidance, Detection, and Reporting
All members of the campus community play an active role in protecting the quality of surface waters. By adhering to established facility design guidelines and prudent operational procedures, great strides are made to prevent contamination from ordinary operations of UNL. In addition, the campus community can be the "eyes and ears" of the campus to eliminate illicit discharges.

Illicit discharges often manifest as flow to or in the storm sewer during dry weather. Some dry weather flows in storm sewers do not contain pollutants. Sources of such flows may be natural springs, groundwater seepage, leaks from domestic water supply lines, water line flushing, landscape irrigation overflow, diverted stream flow, water from foundation drains, air conditioning condensate, de-chlorinated swimming pool discharges, etc. However, it is necessary to determine whether the flow contains pollutants to determine if it is an "illicit" discharge.

Illicit discharges can also occur during precipitation events. For example, storm water running over sites where the land has been disturbed can transport sediment and other pollutants to the

storm sewer system. Dewatering of such sites, without employing the proper controls, can also result in the discharge of pollutants.

Report any suspected dry weather flows or known or suspected wet-weather illicit discharges to the UNL storm sewer system to EHS (phone: 402-472-4925; fax: 402-472-9650; email: stormwater@unl.edu or ehs@unl.edu). Reports can also be sent to EHS using the on-line reporting system, ***Stormwater Pollution Reporter***, displayed prominently on the EHS home page. Conditions can change rapidly and some sources may be intermittent or transient. Therefore, prompt reporting to EHS is encouraged. EHS will investigate potential sources, characterize flows, and take action to stop illicit discharges.

Storm Water Structural Controls

At many UNL sites, certain features have been incorporated into the site design to provide for treatment of storm water to reduce the quantity of water or pollutants discharged to the storm sewer system during precipitation events. Examples include pretreatment devices such as hydrodynamic separators, pervious pavement, bioretention basins, grassy swales, filter strips, green roofs, and rain gardens. It is important that these controls be properly maintained to ensure their effectiveness. All members of the campus community are encouraged to report any concerns with the integrity or maintenance of any structural storm water control at UNL. Reports should be made to EHS as described above for reporting of potential illicit discharges.

Appendix – Protective Policies/Procedures/Activities at UNL

The table below, while not exhaustive, lists many of the steps UNL has taken to prevent illicit discharges.

Potential Sources of Illicit Discharges	Protective Action
Improper chemical disposal (dumping)	EHS provides services to collect and properly dispose of chemical wastes generated at UNL. Waste management procedures/guidance are available on the EHS website.
Improper or ineffective chemical storage	EHS provides guidance on proper chemical storage and regularly audits campus operations. Proper chemical storage procedures, by hazard class, are available on the EHS website.
Improper or ineffective management of oils (petroleum, vegetable, etc.)	EHS maintains current Spill Prevention Control and Countermeasures Plans (SPCC) and supplemental procedures to minimize the risk of adverse events related to oil storage, transport, or transfer at certain campus facilities that store large quantities of oil/fuel. Operations personnel are trained. Additional information on procedures, plans, and web-based training is available on the EHS website.
Trash management	Closed refuse containers are provided at all buildings to minimize litter and facilitate solid waste disposal. These containers are serviced daily, and litter removal is conducted daily.
Improper building connections	All building construction and renovation work must be conducted through UNL Facilities Management and Planning (FMP). Work must conform to national, state, and local codes and ordnances, as specified in UNL's Design Guidelines (available on the FMP website), and contract documents.
Spills, leaks, or releases	EHS encourages pre-planning for spills, leaks, or other releases of hazardous materials, and provides guidance on action to take in the event of a release to the environment. Arrangements are maintained with local agencies and support contractors to minimize the impact from releases.
Sediment, erosion, and control of other potential contaminants resulting from land-disturbing activities	EHS and/or FMP ensure that contractors are taking appropriate actions to ensure that their projects do not have a negative impact on water quality. See EHS SOP, ***Construction Site NPDES Permits***.
Utility boiler and/or cooling tower discharges	Discharges associated with utility operations are directed to the sanitary sewer system.
Landscaping operations	Landscaping operations adhere to water conservation practices. See the UNL Landscape Services website for more information.
Fleet vehicle operations	Fleet vehicle maintenance and storage is provided through the UNL Transportation Services department. All vehicle maintenance and repair is conducted inside of a building.