Industrial Wastewater: Discharge Characterization Guidelines

Department: Environmental Protection
Program: Industrial Wastewater
Owner: Program Manager, Darrin Gambelin
Authority: ES&H Manual, Chapter 43, Industrial Wastewater

SLAC operations result in a wide variety of wastewater discharges, most of which are already listed in existing permits and so are considered routine. Non-routine discharges – that is, wastewater that is not yet listed on an existing permit – require additional evaluation and permitting. *Routine*, *non-routine*, and *prohibited* discharges are described below.

Note *The industrial wastewater (IW) program manager is the point of contact for all permit applications and for (non-radioactive) wastewater characterization. Any wastewater containing radioactive constituents must be reported to both the IW program manager and the Radiation Protection Department (RP).*

Permitted Routine Discharges

There are approximately 20 types of routine discharges listed in SLAC's wastewater discharge permits. These include discharges from cooling systems, radiologically controlled areas, groundwater treatment systems, the cafeteria, the metal finishing pretreatment facility (MFPF), and grinding operations. For a complete list and permit details, see Industrial Wastewater: Permitted and Prohibited Discharge Reference.[1]

Note *Permit compliance requires that wastewater contain no hazardous constituent and that constituents of concern listed in the permit be below a specified limit.*

Non-routine Discharges

Wastewater that is not included in current permits must be characterized in coordination with the IW program manager to determine if it falls within permit conditions, and if so, which type of permit is required. Depending on the evaluation results, the wastewater could be

- Discharged after it is added to SLAC's mandatory wastewater discharge permit
- Discharged after a non-routine discharge permit is issued
- Disposed of by the Waste Management Group (WM) if the wastewater contains prohibited constituents

SLAC must receive specific authorization from the South Bayside System Authority (SBSA) and the West Bay Sanitary District (WBSD) prior to any non-routine discharge.

1 Industrial Wastewater: Permitted and Prohibited Discharge Reference (SLAC-I-750-0A16T-006), http://www-group.slac.stanford.edu/esh/eshmanual/references/iwRefPermits.pdf

Examples of Wastewater Not Included in Permits

Modified Processes Affecting Discharge

Any change in operation that affects the characterization of a listed discharge as routine must be reported to the IW program manager because process modification may change wastewater constituents, strength, volume, or the discharge period. The program manager can assist in characterizing the new wastewater and notifying the SBSA and WBSD.

New Processes

Discharges resulting from a new process or activities must be characterized and added to the mandatory permit if the process or activity will be ongoing. If a new discharge results in a single discharge, it is best handled by applying for a non-routine permit.

Prohibited Discharges

SLAC's permits stipulate that no discharge may enter the sanitary sewer that may cause

- Danger to human life or safety
- Fire or explosion
- Discharge of hazardous waste to the sanitary sewer
- Odors, air pollution, or any noxious, toxic, or malodorous gas or substance, or gas-producing substances
- Flow obstruction or injury to the sewerage facilities
- Interference or overloading of the wastewater treatment or reclamation process, or sewerage facilities, or excessive costs, or use of a disproportionate share of the capacity of the sewerage facilities
- A detrimental environmental impact or nuisance (for example, any discharge with detectable concentrations of polychlorinated biphenyls)
- Dilution of a discharge of waste or wastewater as a substitute for adequate treatment
- Inhibition of maintenance or operation of the sewerage facilities
- Any adverse action that impacts the ability of the sewage treatment plant to protect the San Francisco Bay

Any spills or accidental discharges to the sanitary sewer system that violate the permit conditions must be reported to the IW program manager immediately so that the appropriate regulatory agencies can be notified. The following are examples of spill types that must be reported.

Non-hazardous Wastes

- A non-routine discharge due to a pipe break or similar event
- Any release with a pH less than six or greater than 12.5
- Any spill that may contain radioactivity (also report this to RP)
- Any treatment process upset that may allow a discharge outside of the permit conditions (such as high or low pH, discharge prior to treatment, equipment failure or operator error)

Hazardous Material or Waste

- Any release of fuel or oil
- Any release of chemicals or hazardous waste

Note *For more information on how to handle accidental discharges and spills, see Chapter 16, "Spills".*[2]

2 *SLAC Environment, Safety, and Health Manual* (SLAC-I-720-0A29Z-001), Chapter 16, "Spills", http://www-group.slac.stanford.edu/esh/environment/spills/policies.htm