Waste Acid/Base Management

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

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This guidance document is prepared by MnDOT personnel and is intended only for use on MnDOT projects, including partnership projects, and MnDOT Maintenance Operations.

MnDOT has prepared this guidance document to provide its internal procedures and requirements for work performed on MnDOT rights of way, including MnDOT-owned facilities.

This document should not be construed as a full description of all regulations pertaining to the subject matter. Contact the Environmental Investigation Unit in the MnDOT Office of Environmental Stewardship for additional information or legal requirements.

Management of Waste Acid/Base Background

The Minnesota Pollution Control Agency regulates water-based wastes having a pH of 2.0 or less (strong acids) or 12.5 or more (strong bases) as hazardous waste, because of the corrosivity of the chemicals. Acid and base waste may be hazardous for reasons in addition to pH. Wastes derived from acidic conditions can contain toxic metals leached from materials. Examples of hazardous wastes are solutions containing lead or chromium leached from paints in high enough concentration to render the waste as hazardous for metals.

MnDOT Materials Laboratories that generate acid and base waste during laboratory analytical operations are responsible for proper storage, record keeping, disposal, containerization and containment of spills.

Note: Procedures in this document do not apply to acid from or intended for use in vehicle lead acid batteries.
Storage and Inspection Requirements

- Accumulate the waste in sturdy leak proof containers made of plastic or glass.
- Do not mix with any other waste stream. Mixing is only allowed to neutralize the waste for the purpose of disposal – see Disposal section below. Store containers indoors on a non-reactive impermeable surface away from floor drains and outside entrances/ exits.
- Follow waste handling guidance at: http://www.dot.state.mn.us/environment/regulatedmaterials/wastemgmt.html

Disposal

If the waste acid/base is stored in the hazardous waste storage area, on-site neutralization and sewering must occur within 180 days from the container fill date.

On-site disposal

- Acid/base waste can be disposed of in the sanitary sewer in the laboratory under the following conditions:
  - Must first obtain written approval from the local wastewater treatment facility.
  - Must neutralize the waste to pretreatment specification by the local wastewater treatment facility before sewering. Neutralizing can be done by combining waste acids and bases to reach the acceptable pH range.
  - Notify your district safety administrator prior to mixing.

Off-site disposal

- If the waste acid or base has high levels of lead, chromium or others chemicals, or cannot be neutralized, it must not be sewered. In such instances, the waste will require disposal through the MnDOT's hazardous waste contractor located at: http://www.dot.state.mn.us/environment/regulatedmaterials/wastemgmt.html Follow guidance under the heading Waste Handling and MnDOT approved list of waste contractors link.

Spills

In the event of a small spill, evaluate if spill cleanup material is sufficient to respond to the spill. Contact your district safety administrator before initiating cleanup. In the case of a large spill, clear the area and contact your supervisor and district safety administrator to determine the appropriate course of action.

Record Keeping

On-site disposal

- All acids and bases disposed of in the sanitary sewer must be documented in an operating log and kept on file for a minimum of three years. This log will contain the following: acid/base waste, quantity neutralized, chemical and amount used to neutralize
acid/base waste, pH before and after neutralization, date, name, signature, and comments.

- In accordance with the Minnesota Pollution Control Agency Generator License, waste volumes must be reported annually for the facility.
- Written permission from the local wastewater treatment authority to sewer acids or bases must be kept on file permanently.

Off-site disposal
- Follow waste handling guidance at:
  
  http://www.dot.state.mn.us/environment/regulatedmaterials/wastemgmt.html

Please contact the Environmental Investigation Unit for further assistance.