

Floor Management Plan

[Company name, City, Minnesota]

Developed: *[date]*

Reviewed: *[date(s)]*

Updated: *[date(s)]*

Contents: *(Modify to reflect your final document)*

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Goals

(Sample language - customize to fit your facility and reflect your company goals.)

[Company name] recognizes that maintaining floors in good condition is challenging, but critical to preventing harm to human health or the environment. For this reason [Company name] aims to

1. prevent releases to the floor wherever possible; release prevention should be part of this floor management plan.
2. reduce the potential for environmental harm by recovering hazardous liquids, wastes and similar materials that are collecting on the floor as soon as possible, but within 24 hours.
3. ensure that appropriate coatings, liners or catch pans are placed on floors in all areas where releases are likely to occur.
4. reduce the likelihood of hazardous waste migrating or leaking through the floor by ensuring that floors, floor coatings and liners are maintained in good condition.

We recognize that implementing this floor management plan helps our company address the following regulations:

- Maintain the facility in a way that will prevent any unplanned, sudden or non-sudden releases of hazardous waste. (Minn. Rules 7045.0566 subpart 2.)
- Store hazardous waste in closed, non-leaking containers marked with the words “hazardous waste” and a description of the contents. (Minn. Rules 7045.0626 subpart 4 and 4a.)

We acknowledge that floors, trenches, sumps and pits in our facility may be wet during and immediately following normal operations. To prevent a release to the environment, we will:

1. Ensure the floor, trench, sump or pit has been designed to withstand drips and spills of aqueous plating chemistries.
2. Ensure, to the extent possible, that flooring and process tanks and equipment are designed so that it is easy to gain access to the floor to clean and inspect it.
3. Ensure, to the extent possible, that floors are sloped or drained in a way that makes it easier to clean up spills and releases, and to clean the floor.
4. Clean up drips, spills and other liquids collecting on floors within 24 hours or less.
5. Regularly maintain the floors, floor coatings and liners, trenches, sumps and pits to prevent a release to the environment.
6. In case of a spill of a volatile material (i.e. solvents, degreasers, paint thinners and cyanides), clean up small spills immediately; for large spills, implement our contingency plan and report the spill to the proper state and federal authorities.

Implementation

(Sample language - customize to fit your facility.)

The [responsible position, example: facility hazardous waste coordinator] is responsible for ensuring this plan is implemented.

Key facility personnel [may list positions] are trained in hazardous waste management, including spill and release response procedures. They are aware of the contents of this floor management plan; familiar with the portions that apply to their job responsibilities; and, are able and responsible to carry out those portions in their day-to-day duties. For Large Quantity Generators, training on this Floor Management Plan is documented in our hazardous waste training records, including: job titles, job descriptions, and type and amount of every training, as applicable.

Definitions

(Sample language - customize to fit your facility terminology. Keep the general definitions for minor, moderate, and severe damage to ensure uniformity among shops.)

| | |
|-------------------------|--|
| Trench | A depression used to channel water, either freely or in pipes. |
| Sump | <p>An excavated low point designed to collect liquids for transfer to another area, typically through the use of a pump. For sumps that collect hazardous waste the following definition from Minnesota Rules 7045.0020 applies:</p> <p><i>Sump</i> means any pit or reservoir that meets the definition of “tank” and those troughs or trenches connected to it that serve to collect hazardous waste for transport to hazardous waste storage, treatment, or disposal facilities.</p> |
| Dike | An embankment, curb or ridge of either natural or synthetic materials used to prevent the movement of liquids, sludges, solids, or other materials. |
| Minor Damage | <p>For concrete, means damage to the skim coat exposing aggregate but with no noticeable reduction in the thickness of the concrete.</p> <p>For coated areas, means non-extensive chipping or damage to the floor coating and cracks where there is no noticeable thickness or depth.</p> |
| Moderate damage | Damage that is more than <i>minor</i> but less than <i>severe</i> . |
| Severe damage | The loss or damage of coatings, concrete or flooring material such that any spilled or pooled liquid in the area could reach the soil. |
| Contingency Plan | A document laying out an organized, planned, and coordinated course of action to be followed in case of a fire, explosion, or release of hazardous waste which could threaten human health or the environment. |
| Spill | The accidental or intentional discharging, leaking, pumping, pouring, emitting, dumping, or escaping into or on any land or water of hazardous wastes or materials which, when spilled, become hazardous wastes. |
| Small spill | A spill of less than five gallons that can be contained completely and immediately and will not cause pollution of the air, land or waters of the state and will not impact human health or the environment. |
| Large spill | A spill of five gallons or more or, a spill of any size that cannot be contained completely and immediately and may cause pollution of the air, land or waters of the state and may potentially harm human health or the environment, or a spill that triggers implementation of the contingency plan. |
| Release | A spilling, leaking, emitting discharging, escaping, leaching or disposing of a product into the environment – air, land or waters of the state. |
| Storage | The holding of hazardous waste for a temporary period, at the end of which the hazardous waste is treated, disposed of or stored elsewhere. |

Operations

The [facility name] uses the following processes:

Sample table: Replace the example processes in the table with your facility processes.

Include high and low chemical impact areas, as well as, any floor tract used as a conveyance system.

Table 1: Processes and Process Areas

| Area | Processes | Coated floor? | Comments |
|------------------------------|--|---------------|---|
| Process area A | <ul style="list-style-type: none"> • Acid and alkaline cleaning baths • Copper cyanide strike and plate • Satin and bright nickel • Trivalent chromium | Yes | |
| Process area B | <ul style="list-style-type: none"> • Acid and alkaline cleaning baths • Sulfuric acid and anodizing • Dyes | Yes | Coating replacement scheduled for Sept 2007 |
| Process area C | <ul style="list-style-type: none"> • TCE vapor degreasing | Yes | |
| Storage | <ul style="list-style-type: none"> • Parts storage • Chemical storage | No Yes | |
| Hazardous waste storage area | <ul style="list-style-type: none"> • Hazardous waste storage | Yes | |
| Shipping and receiving | <ul style="list-style-type: none"> • Shipping and receiving | No | |
| Wastewater treatment | <ul style="list-style-type: none"> • Wastewater treatment | Yes | |
| | <ul style="list-style-type: none"> • | | |
| | <ul style="list-style-type: none"> • | | |

Facility layout, trenches and drains

(Insert map/floor plan. Show process areas identified in Table 1.)

Preventing/removing liquids from floors

Sample language - customize to fit your facility operations. Include

- *floor and sump or drainage design detail;*
- *your wash schedules; and*
- *method(s) used to ensure process materials are not sitting on the floor for any length of time.*

In August, 2002, a thorough inspection was made of process areas looking for improvements that could be made to prevent spills and leaks from process tanks. A float-activated auto-shutoff valve was installed in Process Tanks 5, 6 and 7 to prevent overfilling which was a problem with these tanks. Drain Boards were missing between Tanks 11 and 12 and 17 and 18, which were replaced. Overflow rinse tanks 7 and 8 were discharging to the floor into the trench in Area A and from there to treatment. We instead installed a small receiver tank to collect wastewater from 7 and 8. The receiver tank is auto-pumped through a pipe to wastewater treatment. Areas where floors should be coated with corrosive resistant coatings were identified. Tank 15 was on a stand that was very close to the floor, making it very difficult to inspect and clean underneath. The stand was replaced with another stand higher off the floor. Mild corrosion of flooring was observed in several areas, which was patched by a flooring specialty company.

In September, 2002, floors in the process and storage areas were coated with a two-part epoxy coating. Floors in the process areas slope to trenches which drain to sumps so that drips and floor wash water is collected.

Floors, including sumps, vaults, pits, trenches, dikes, and secondary containment areas are inspected to identify and correct problems before they harm human health or the environment. They are inspected [insert inspection frequency] for malfunctions, deterioration, operator error, and discharge (i.e. spills, build-up of solids or residues).

Floors are washed down as needed, but at least once every [insert floor wash-down frequency*], to prevent the buildup of solids or residues. Any spills that occur will be managed according to the facility contingency plan. Although floor washings are not currently documented, we may choose to track this in the future. Any needed repairs are logged, photographed, if feasible, and tracked to completion.

Sumps are equipped with automatically -activated alarms and pumps. When drippings accumulate, the alarm sounds and company personnel are notified to empty the sump contents into the wastewater treatment holding tanks. All alarms are electronically controlled; both an alarm time and a resolved time are recorded.

**The wash-down frequency may vary from one process area to another. You may identify each process area and its wash-down frequency. Or you may use the most conservative wash-down frequency to ensure the most sensitive area is washed on time.*

Identifying/correcting potential problems

(Sample language - customize to fit your facility operations)

Floors

The [responsible position, example: shift supervisor] is responsible to visually observe floors during the shift and to address any leaks or spills before the end of the shift. The [responsible position] will determine the degree of the damage, the chemical hazard, and schedule corrective action and floor repair following the guidelines in Table 2, page [8]. For all except small spills with no damage that are contained and immediately cleaned up, the [responsible position] will document the incident on the inspection form, identify the cause, implement the contingency plan if needed, perform or schedule corrective actions, and track them to completion.

Employees are instructed to inform their supervisor if they see leaks or spills on the floor; supervisors are instructed to check it out immediately.

The [responsible position] will lift grates over the floor once every [insert number of days – suggest 45, but may vary with location, use, etc.] for a detailed inspection and cleaning. This inspection and cleaning is documented using the attached floor inspection form. Areas of damage are noted and photographed, if possible, and the cause identified. Corrective actions are specified, scheduled and tracked to completion according to this schedule.

An independent third party conducts a floor inspection [quarterly or semi-annually] during normal operations. These inspections do not include lifting of grates; however, a flashlight is used to visually inspect narrow, dimly-lit or difficult-to access areas. Damaged areas are noted; inspection recommendations are specified and tracked to completion.

Sumps

Sumps are allowed to contain only a minimal amount of fluid and will be inspected as follows:

- Daily, [responsible position] will inspect sumps connected to hazardous waste storage tanks, the connecting piping and the storage tanks.
- As part of the [insert number of days – suggest 45]–day inspections, the [responsible position] will visually inspect sumps for signs of cracks and buildup of solids or chemical residues.
- Employees are instructed to inform their supervisor if they see sumps that are overflowing; the supervisors are instructed to check it out immediately.

Piping

As a best management practice, every [insert number of years – suggest five (5)] years a third party conducts an inspection of these underground pipes:

- from the process tanks to the wastewater treatment system and
- from the wastewater treatment system to the sewer.

Modifying inspection frequency

We may modify the frequency of any of these inspections depending on the results found during our [insert number of days – suggest 45]–day inspections. For example, should we find issues needing correction during every [insert number of days – suggest 45]–day inspection, we may increase the inspection frequency to weekly. Conversely, if our [insert number of days – suggest 45]–day inspections result in no significant findings, we may reduce the frequency of these inspections. [Position responsible] will note any change in inspection frequency in our inspections records and/or this floor management plan.

Table 2: Corrective action schedule for flooring damage

(Sample language - customize corrective action schedule to fit your facility operations)

| | Damage | Severe | Moderate | Minor |
|-----------------|--------|---|---|--|
| Chemical hazard | High | Clean up and correct immediately: <ul style="list-style-type: none">• If corrective action is effective, make permanent repair within 6 months in conjunction with a planned shutdown.• If not effective, before it comes into contact with process fluids or water again, repair the area.• If hazardous waste was or may have been released to underlying soil, implement the Contingency Plan. | Clean up; perform corrective action and schedule repair determined by success of corrective action (see left) | Clean up; schedule repair within 6 months (in conjunction with a planned shutdown) |
| | Medium | Clean up within 24 hours; schedule repair determined by success of corrective action (see above) | Clean up; schedule repair within 6 months | Clean up; schedule repair within 6 months |
| | Low | Clean up within 24 hours; schedule repair for as soon as possible, but within 6 months of damage (typically scheduled in conjunction with a planned shutdown for the area) | Clean up; schedule repair as needed (typically during next floor repair event) | Clean up; schedule repair as needed (typically during next floor repair event) |

Example corrective actions:

- Restrict chemical use in area
- Install a temporary patch
- Divert water flow from the area

Training

(Sample language - customize to fit your facility operations)

Key personnel [may include list of responsible positions, e.g. shift supervisor, sump inspector, etc.] are trained in the floor management procedures [insert frequency] during hazardous waste management training. Training records on current personnel are kept until closure of the facility. Training records on former employees are kept for at least three years from the date the employee last worked at the facility. Training records will accompany personnel transferred within the company.

Documentation

(Sample language - customize to fit your facility operations)

[Responsible position] will keep records from the [insert number of days – suggest 45]–day, quarterly and 5-year inspections, as well as documentation tracking completion of all corrective actions. These records of inspections and repairs are kept in [location] for at least [insert number of years – suggest 3] years from the last date corrective actions were completed.

Floor plan review schedule

(Sample language - customize to fit your facility operations)

This plan is reviewed annually in [month] and updated as needed (for example, after any incidents).