CHEMICAL SPILL PROCEDURES

MOCK DRILL REPORTING FORM
PROJECT NAME:

	Name	Date:	Signature
Project Manager:		00/00/2023	
Project Engineer:		00/00/2023	
QHSE Officer:		00/00/2023	

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1. Objective

The range and quantity of hazardous substances used in [Project/Site Name] make it impossible to provide a single all-encompassing plan for dealing with chemical/biological incidents. The Project QHSE Engineer, Project Manager , Project Engineer, supervisors and each member of the MEP-FM team is expected to deal with minor spills (see definitions, below) occurring in their area. This requires pre-planning and training/rehearsal.

2. Scope

This "CHEMICAL SPILL PROCEDURES MOCK DRILL REPORTING FORM" document provides a guidelines for the development of an individualized spill response plan and Reporting.

3. Types of Spills:

A. Minor Spills are those which can be handled by the MEP-FM team.
B. Major Spills are those which require notification of or assistance from other agencies e.g., Environment Agency A spill automatically becomes "major" in the following instances:
   - There is a fire, or the threat of fire, outside of a controlled space (fume hood).
   - There is a personnel injury or exposure likely to require medical assistance.
   - The spill involves unknown or highly reactive material.
   - There is a release of a toxic or flammable gas outside of a controlled space.

4. Personnel to Be Notified:

Position	Name	Work Phone	Home/Cell Phone
Project Manager:			
Project Engineer:			
Primary Investigator/HSE:			
Facility/Client's Representative:			
Police:			

5. Spill Control/Containment Material/Supplies:

For the project [Project/Site Name] for a recommended list of materials/supplies).

6. Minor Chemical Spill Procedures:

- Alert people in the immediate area of spill.
- Avoid breathing vapors from spill.
- Put on protective equipment, including safety goggles, suitable gloves, and long sleeved lab coat.
- Confine spill to small area.
- Use appropriate materials to neutralize and absorb inorganic acids and bases.
- For other liquids, absorb spill with vermiculite, dry sand, or adsorbent pads.
- For solid spills. Cover the spill with a slightly damp paper towel to avoid creating a cloud of dust, Push the material into a dustpan or other instrument using the towel- do not use a broom/dust brush.
- Collect material, used adsorbents/neutralizing agents, etc. in a polyethylene bucket or bag.
- Call EH&S (Project QHSE Engineer) to arrange for collection and disposal of spill residue.

7. Major Chemical Spill Procedures:

- Attend to injured or contaminated persons and remove them from exposure.
- Alert people in the area to evacuate. If danger is believed sufficient - pull the fire alarm and evacuate the building.
- If spill material is flammable, turn off ignition and heat sources if that can be done safely.
- Close doors to affected area.
- Call Police (000. Provide as much of the following as is known.
- Contact-Environment Agency. (+000 0 000 0000)
  - What chemical(s) are involved?
  - How much was spilled.
  - Where the spill is located.
  - Nature of any injuries.
  - What control measures have been taken?
  - Your name and phone number (or where you will be located).
- Meet responders.

8. Type of Material/Clean-Up Procedure:

The table below provides a synopsis of type chemicals that may be spilled and recommended clean-up materials. This list should be amended to add any chemicals requiring special procedures. As always, the SDS on the particular chemical is a preferable reference. If you choose to purchase, pre-packaged, commercially available spill kits, the clean-up procedures should be modified to reflect specifics, e.g., Acid Spills: Use container "A" from spill supplies in accordance with directions on the package.

9. Quick Reference for Spill Cleanups:

Chemical Spilled	Clean-Up Procedures
Acids, organic	Apply sodium bicarbonate. Adsorb with spill pillow or vermiculite.
Acids, inorganic	Apply sodium bicarbonate/Calcium Oxide or sodium carbonate/calcium oxide. Adsorb with spill pillow or vermiculite. **NOTE:** Hydrofluoric acid is an exception to the general practice, see below.
Acid Chlorides	Do not use water. Absorb with sand or sodium bicarbonate.
Aldehydes	Absorb with spill pillow or vermiculite.
Aliphatic Amines	Apply sodium bisulfite. Adsorb with spill pillow or vermiculite.
Aromatic Amines	Absorb with spill pillow or vermiculite. Avoid skin contact or inhalation.
Aromatic Halogenated Amines	Absorb with spill pillow or vermiculite. Avoid skin contact or inhalation.
Azides	Absorb with spill pillow or vermiculite. Neutralize with 10% ceric ammonium nitrate solution.
Bases (caustic alkalis)	Neutralize with acid, citric acid, or commercial chemical neutralizers. Absorb with spill pillow or vermiculite.
Carbon Disulfide	Adsorb with spill pillow or vermiculite.
Chlorohydrins	Absorb with spill pillow or vermiculite. Avoid skin contact or inhalation.
Cyanides	Cover solids with damp paper towel and push onto dust pan or use a HEPA filter vacuum to collect the solids. Absorb liquids with spill pillow or vermiculite.
Halides, organic or inorganic	Apply sodium bicarbonate.
Halogenated Hydrocarbons	Absorb with spill pillows or vermiculite.
Hydrazine	Avoid organic matter. Apply "slaked lime". Adsorb with spill pillow or vermiculite.
Hydrofluoric Acid	Adsorb with calcium carbonate (limestone) or lime (calcium oxide) rather than sodium bicarbonate. The use of sodium bicarbonate will lead to the formation of sodium fluoride, which is considerably more toxic than calcium fluoride. Be careful in the use of spill pillows used to adsorb the acid. Some pillows contain silicates which are incompatible with hydrofluoric acid.
Inorganic Salt Solutions	Apply soda ash

Mercaptans/Organic Sulfides	Neutralize with calcium hypochlorite solution. Absorb with spill pillow or vermiculite.
Nitriles	Sweep up solids. Absorb liquids with spill pillows or vermiculite.
Nanoparticles	Pick up particles with a HEPA or ULPA filtered vacuum.
Nitro compounds/Organic Nitriles	Absorb with spill pillow or vermiculite. Avoid skin contact or inhalation.
Oxidizing Agents	Apply sodium bisulfite.
Peroxides	Absorb with spill pillow or vermiculite.
Phosphates, organic and related	Absorb with spill pillow or vermiculite.
Reducing Substances	Apply soda ash or sodium bicarbonate.

APPENDIX A

10. Spill Clean Up Materials

Each [COMPANY NAME] Site/Project team for [Project/Site Name], should have at least enough material to handle spill of 1 LT/1 KG (or the largest container in inventory) or all chemicals on-hand. In addition, each facility, especially those with floor drains should have spill socks, pillows, pads or bulk absorbent to contain spilled material.

Kits may be built from raw materials, see table in basic document for type materials.

Purchased as individual items or as composite kits from suppliers or QHSE personnel.

The table below (courtesy of Bio-Engineering) are the contents of a spill kit for a typical laboratory.

Material	Spill Type	What it Does
Mercury Adsorb Powder	Elemental Mercury	Converts elemental mercury on work surfaces, in cracks, and hard to reach places into metal/mercury amalgam.
Dry Acid Neutralizer	All acids except HF	Neutralizes Acids
Dry Hydrofluoric Acid Neutralizer	Hydrofluoric Acid	Neutralizes Hydrofluoric Acid
Dry Base Neutralizer	Bases/Caustics	Neutralizes Bases
Formaldehyde Polymerizer	Formaldehyde/Formalin	Reacts with water based formaldehyde solutions to form a nontoxic, polynoxyline polymer which yields a plastic like solid
Activated Carbon	Flammable Solvents	Cleans up flammable solvent spills and suppresses hazardous vapors

Solid-A-Sorb	All Spills Except HF	Mixes well with water and oil based substances
Sorbant Pads	Liquids	Quickly contains small spills
Sorbant Socks or Booms	Liquids	Quickly contains larger spills.

11. References:

[Write your State or Country's References Here]
Environment Agency
Hazardous Materials
Waste Management

12. Lesson Learned From the Spillage Drill:

Although many spills may appear routine, each is unique in location, environmental conditions and behavior. Furthermore, responder capability, response technology, norms, expectations and political climate are always in flux and will continue to change with time. There are always ways to improve and adapt. Because of the reactive and continuous nature of emergency response work the [COMPANY NAME] has found it challenging to establish an expeditious, yet still meaningful procedure in which to capture lessons for each response; and even more difficult to evaluate and implement those lessons. As with any change, it took time to adopt this method (adopted during the spillage drill), yet through the dedication of the [COMPANY NAME], lesson learned reports and an annual Operating Plan, this approach has been successful. The [COMPANY NAME], staff sees the benefits come back around during improved training, equipment, skills, preparedness and responses. Use of this process is now standard and expected. It has increased confidence in staff that the organization has the ability to capture and address both small and significant issues, the courage and dedication to evaluate and implement changes, and to become a progressive learning organization. Through the use of this system the [COMPANY NAME], 's response products have been improved, the [COMPANY NAME]'s responders are more aware of lessons learned, anticipate potential situations that could lead to known outcomes, make conscious decisions to choose wiser courses, and engage in spill response with improved effectiveness and efficiency.

Note:
*No any use of any hazardous chemical's storage, handling and use is in the scope of work for [COMPANY NAME] at [Project/Site Name] project.

13. Photos: Attach Photos Here

