CONSTRUCTION SITE CHEMICAL AND MATERIAL CONTROL HANDBOOK

A GUIDE TO REDUCING NONPOINT SOURCE POLLUTION FROM CONSTRUCTION SITES

Construction Site Chemical and Material Control Handbook

A Guide to Reducing Nonpoint Source Pollution from Construction Sites – 2015 Edition

The Commonwealth of the Northern Mariana Islands Bureau of Environmental and Coastal Quality's (BECQ) Division of Coastal Resources Management (DCRM) and Division of Environmental Quality (DEQ) prepared this handbook with the help of other agencies.

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This document is a modification of the *"Construction Site Chemical and Material Control Handbook"* developed by the North Carolina Department of Environmental and Natural Resources' Division of Water Quality and Coastal Management pursuant to NOAA Award #NA070Z0171. Much of the information contained in these documents was extracted from the U.S. Environmental Protection Agency's "*Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters*".

Contents

GLOSSARY*

Acids - Materials that will lower the pH of a water solution.

Alkalis - Materials that will raise the pH of a water solution. Also called bases or caustics.

Best Management Practices (BMPs) - Management techniques or methods that have been found to be the most effective and practical means in achieving an objective – in this context, pollution control!

Erosion - A type of weathering where surface soil and rock are worn away by water and wind.

Hazardous Waste - Discarded materials, either liquid or solid, that can cause damage to health or environment. In general, wastes that are toxic, reactive, flammable or explosive, or are listed as hazardous by the government, are regulated by DEQ.

Nonpoint Source Pollution - Contamination that comes from many diffuse sources (such as storm water runoff) rather than from a specific point such as an outfall pipe.

Nutrients - Materials, especially fertilizers, usually containing nitrogen or phosphorus, that are often used to promote plant growth.

Pesticide - A group of chemicals used to control the growth of insects, plants, fungi, or rodents. Specific categories include insecticides, herbicides, fungicides, and rodenticides.

Petroleum Products - A variety of chemicals including fuels, motor oil, and lubricants that may be flammable, toxic, or harmful to the environment.

Pollution - The presence in or introduction into the environment of a substance or thing that has or has potential to have harmful or poisonous effect.

Sanitary Wastes - Wastes containing blood, fecal matter, or other bodily fluids or materials.

Solvents - A group of chemicals used to clean metals, remove greases or adhesives, or dissolve certain organics. These are often flammable or otherwise hazardous.

**Note: These are not legal definitions.*

INTRODUCTION

This handbook aims to provide information to the construction industry that will help them prevent water pollution from the improper handling and use of chemicals and other materials at construction sites, including roads and highways.

This handbook offers general information and does not provide exhaustive coverage of all regulations, requirements, and guidelines that apply to chemical and material management.

If you have specific questions or concerns that are not addressed in this guidebook, please use the contact information on page 35 to connect with the Bureau of Environmental and Coastal Quality's Division Coastal Resources Management office – we are happy to be of assistance.

Let's work together to protect and enhance the health of CNMI's environment and communities.

Pollutant Categories

Although sediment - organic and inorganic materials deposited from water or wind - is the most widely recognized potential water pollutant from construction activities, there are many other potential pollutants, including:

- **Pesticides** (insecticides, herbicides, fungicides, and rodenticides);
- **Nutrients or fertilizers** used to promote postconstruction revegetation;
- **Petroleum Products** (oils, gasoline, lubricants, asphalt, and degreasers);
- **Construction** Chemicals (concrete products, sealers, paints, etc.);
- **Solid Wastes** (paper, wood, garbage, sanitary paper, etc.);
- **Washwater** containing any of the above substances.

This guide will help you manage these potential pollution sources at your construction site.

Why Pollutant Management Matters

If not handled properly, pollutants can be carried off-site by rain water or wash water, where it will eventually enter the nearest storm drain or stream and be carried to the lagoon, ocean, lake, wetland, or estuary. Strong winds and accidental spills can also lead to contamination of groundwater. When water pollution occurs in any of the above manners it is referred to as "nonpoint source pollution" (NPS).

Risks of Pollution from Construction Sites

Two primary factors in determining the water pollution risks that exist at a site are the type of chemicals used and the potential for them to enter surface waters. The chemicals used and the potential for them to enter surface water will in part be determined by what is being constructed, the physical conditions at the site, and where construction is occurring.

For example, housing sites generally require more extensive landscaping. The risk of pollution is also more likely from sites that receive a lot of rain, have nonabsorbent soil, little or no vegetation, steep slopes, and are located near surface water.

Pollutant Categories - Environmental Impacts of Concern

There is a direct link between land alteration and the health of streams, wetlands, coastal waters, and aquifers. Construction activities can have negative impacts on air quality, water quality impacts due to erosion and sedimentation, and solid waste management. The best management practices highlighted in this guide are aimed to ensure the health of people and the environment and help minimize construction impacts on and off your site.

Pollution Prevention Principles

Use the following principles to prevent pesticides from polluting water:

- ***PROPER STORAGE***
- ***PROPER USE***
- ***PROPER DISPOSAL***

By implementing the requirements and best management practices (BMPs) in this guide, you can help BECQ ensure that the work you do at your construction site does not negatively impact people or the environment.

Don't send chemicals into our waterways!

It is a common misconception that storm sewers drain to a wastewater treatment plant. This is not the case. Storm sewers transport stormwater directly to the nearest stream, wetland, beach, or ocean.

PLEASE don't dump chemicals out!

Advantages of Preventing Pollution

- **Protecting human and environmental health.** By preventing chemicals from contaminating water, we protect our water for drinking, swimming, fishing, and tourism.
- **Conserving resources.** Many of the practical onsite chemical control approaches in this handbook may result in significant cost saving due to conservation of raw materials and decreased waste disposal costs.
- **Decreasing liability.** Moreover, the use of these best management practices protects the safety of company employees and decreases the business' environmental damage liabilities.
- **Helpful companies, happy communities.** Companies may also benefit from increased employee morale and improved reputation as a responsible corporate citizen.
- **Better returns.** A clean environment brings higher real estate prices for both selling and leasing of properties and will generate more revenue from the tourism industry as visitors return home with more favorable impressions of our islands and our example of environmental stewardship.

Pollution Prevention Methods – Build Green

In addition to **reducing, reusing, recycling, and properly collecting, handling, storing, and disposing** of chemicals and materials, one of the best water pollution prevention techniques sites is to preserve or establish a vegetated buffer along all surface waters.

- **Reduce land disturbance.** To the greatest extent possible, try to minimize clearing and earth moving activities in order to reduce opportunities for runoff and erosion on your site.
- **Maintain buffers.** When designing and clearing a site, maintain as much native vegetation as possible and use or preserve buffers along the waterways.

VEGETATIVE BUFFERS

Vegetative buffers are undeveloped strips of land along the streams, wetlands, or shorelines that can help reduce the impacts from land uses on adjacent waters. The vegetation that grows in the buffer becomes a "living filter" for runoff from upslope areas. Sediments, fertilizers and other chemicals in runoff can become trapped, modified, or used by the vegetation, which reduces the amount of pollutants entering surface waters. Roots of buffer vegetation also help hold the soil in place, reducing erosion and sedimentation.

By maintaining a buffer you will minimize soil disturbance and the need for fertilizers while also protecting water quality.

Check with BECQ to see if buffers are recommended at your construction site.

Green Building Principles

Careful planning and consideration of waste issues prior to going on-site promotes effective chemical and materials management and can significantly decrease environmental impacts from construction activities.

Environmentally conscious building design can also significantly affect the long-term impacts of facility operation. Strategies such as proper siting; the creative use of shade and natural lighting; the installation of energy-efficient heating, air conditioning, lighting and other equipment as well as high-pressure/low flow plumbing; and the use of renewable energy systems and other more innovative designs can significantly decrease utility bills while also reducing environmental impacts.

Material reuse or the use of building materials made from recycled products decreases overall waste generation and can significantly add character and value to homes and buildings.

Whenever feasible, use "environmentally preferable" products such as recycled and/or recyclable building materials. Additional information on Green Building Principles is available through the Center of Excellence for Sustainable Development at www.sustainable.doe.gov and through the monthly newsletter "Environmental Building News" online at www.BuildingGreen.com.

Many other resources can be found on the internet by searching for the term "green building," and BECQ can provide additional information to support implementation of environmentally sound practices from the start to the finish of your construction project.

Low impact development is being increasingly used to optimize resource use and further cost-effective and environmentally sound development.

Environmental Impacts of Concern

Air Quality – Fugitive Dust and Emissions

Many of the measures taken to reduce dust problems are the same as those taken to minimize erosion and sediment run-off. Dust control is also important to protect local air quality and human health. To reduce health risks and environmental concerns, it is important to:

- Implement a dust prevention strategy developed at the project planning stage;
- Take dust suppression measures, such as promptly watering exposed areas when visible dust is observed;
- Locate stockpiles and batters in locations where they are protected from wind and away from drainage lines; and
- Install wind fences wherever appropriate.

Water Quality – Erosion and Sedimentation

In the CNMI, **all construction sites are subject to earthmoving and sediment control (E&SC) and post-construction stormwater criteria** described in the 2006 CNMI/GUAM Stormwater Management Manual (available at www.deq.gov.mp). To help prevent negative impacts from erosion and sedimentation, the following conditions must be met unless a waiver is granted (see next page):

Erosion

Objective: Minimize the quantity of soil lost during construction due to land-clearing.

BMPs to Minimize Erosion:

- Minimize land disturbance through phasing work in the planning and design stage;
- Keep the areas of land cleared and the period of time areas remain cleared to a minimum; and
- Install control measures to manage erosion – *see DEQ's Erosion and Sediment Control Field Guide and SWPP requirements for more information!*

- All sites over one (1) acre must submit a Notice of Intent to US EPA for coverage under a general National Pollutant Discharge Elimination System (NPDES) permit;
- All sites **disturbing over 1 acre** must prepare and implement Stormwater Pollution Prevention Plan (SWPPP) in accordance with the NPDES Phase II Stormwater Program.
- SWPPPs must be approved by DEQ prior to NOI submittal.
- Measures must safely convey the 10-year storm (10 inches) with non-erosive velocities and temporary sediment trapping devices must retain a minimum of the 1½ inch storm.

- All projects must comply with 11 E&SC Standards:
  1. Minimize unnecessary clearing and grading to preserve existing natural areas;
  2. Protect waterways (minimum 25-foot buffer) and stabilize drainage ways;
  3. Phase construction to limit soil exposure;
  4. Stabilize exposed soils immediately (~14 days);
  5. Protect steep slopes and cuts from erosion;
  6. Install perimeter controls to keep sediment on site;
  7. Employ advanced sediment control devices;
  8. Certify contractors on E&SC plan implementation;
  9. Conduct a pre-construction site meeting and adjust plan if necessary;
  10. Where feasible, schedule construction during the dry season; and
  11. Maintain E&SC controls throughout the entire construction process.

Solid Waste Minimization

Objective: Minimize waste loads discharged to the environment.

Suggested Measures:

- Reduce wastes through avoidance, reuse, and recycling;
- Incorporate waste minimization targets and measures into your site's environmental management plan; and
- Segregate waste and recyclable materials on site.

Solid Waste Minimization

Solid waste minimization focuses on the principles of waste avoidance or reduction; waste reuse; and recycling.

Efficient materials management can reduce economic and environmental costs.

Solid Waste Disposal

All solid waste must be disposed at each island's landfill facility managed by the Department of Public Works (DPW).

Depending on the nature and quantity of the waste generated and stored on site, it may be regulated by DEQ as a hazardous waste.

If it is considered a hazardous waste, a comprehensive set of requirements may be triggered which relate to how and for how long the waste can be stored, who may transport the waste, and by whom the waste may be treated and disposed.

Improper "solid" waste storage negatively impacts the environment, creates additional clean-up costs, and may result in fines!

Use of BMPs will help you avoid unnecessary costs and liabilities.

Contact DEQ for more information on hazardous waste management at 664-8500.

Open burning of vegetative construction debris is allowed only under certain restrictive conditions. Contact your DEQ Office to determine these conditions. Failure to obtain approval and meet conditions can result in fines. You should also contact Department of Fire and Emergency Medical Services (DFEMS) for additional restrictions.

SOLID WASTE

Various forms of solid waste may be generated at a construction site. These materials include vegetative waste from clearing and maintaining a site; wood and paper from packaging and building materials; scrap metal, rubber, plastic, glass, and masonry and asphalt products from building materials; and personal use items such as food and beverage containers, cigarette packages, leftover food, and sanitary waste. If not properly managed, these materials become litter and can enter and pollute surface waters.

Proper management of solid waste at construction sites can result in decreased disposal fees and liabilities, as well as avoidance of regulatory violations.

Solid Waste BMPs

Minimize the quantity of solid waste generated at your site by "reducing, reusing, and recycling". This reduces the amount of waste you must store and dispose of, saving you tipping fees and reducing management costs of your project.

Reduce

- Plan for and purchase only essential construction materials - don't buy more materials than are needed.
- Encourage suppliers to discontinue using unneeded packaging.
- Use proper site development to preserve existing vegetation and reduce vegetative waste.

Reuse

- Whenever possible, reuse excess or discarded materials on site.
- To avoid the need for disposal, if scrap wood is available and will not be reused, consider making it available to neighbors or donating it.
- Reuse vegetative debris by chipping and using as much as possible on site.

Recycle

- Segregate trash for easy recycling.
- Whenever possible, recycle discarded materials such as scrap metal, wood, and cardboard at yo ur local recycling facility.

PESTICIDE & STRUCTURAL TREATMENT APPLICATIONS

Prior to conducting pesticide treatment on concrete structure or building foundation projects, there are some information you should be aware of.

A pesticide is any substance used to control pests. Pests may be target insects, vegetation, fungi, etc. Most control the pests by poisoning them. Unfortunately, pesticides can be poisonous to humans; some are very poisonous, or toxic, and may seriously injure or even kill humans.

Pesticides can irritate the skin, eyes, nose, or mouth. The most important thing to remember is that you should always use caution whenever you work with any pesticide!

Only a professional pest control applicator can perform the structural treatment. The applicator must be trained and certified (licensed).

PESTICIDE & WATER RESOURCES

Water is one of our greatest resources and is essential for all life. Thus, it is our responsibility to protect this resource. To minimize contamination of our water resources:

- The pesticide chosen for application shall be based on its least potential for leaching into the groundwater;
- The pesticide must be applied at appropriate times (not during windy or rainy days);
- Pesticide applied must be measured for the target site and directed at the target site; and
- Pesticide application must follow directions on the product label.

Here are some steps to guide you.

As soon as you receive your Earthmoving Permit from DEQ, we recommend you:

- Contact a professional pest control company and provide the establishment with:
  1) A vicinity map (and driving directions);
  2) A building foundation and footing plan; and
  3) An estimated timeframe for when the foundation shall be ready for pesticide structural treatment.

- Once the professional pest control company submits a completed Pesticide Structural Treatment Permit Application to the Division of Environmental Quality, there is a 10 business day processing period.

- Upon review and approval of the permit application, DEQ shall communicate with the professional pest control company to schedule the pesticide structural treatment application.

- The pesticide structural treatment application shall be performed during business hours (8am-5pm) and is best performed in the afternoons to ensure the soil or structure is dry; and most especially since there is a *4-hour re-entry* interval at the treated site. **This precaution is for the safety of all workers at the construction site.**

- For more information, contact BECQ-DEQ at (670) 664-8500.

NUTRIENTS/FERTILIZERS

Fertilizers are likely to be used on construction sites when reestablishing vegetation on graded or disturbed areas. Fertilizers contain nitrogen and phosphorus, plant nutrients which in excess amounts can adversely affect the quality of surface waters.

One way these chemicals can impact surface waters is by causing algal blooms which then produce oxygen poor waters that can lead to the decline or death of aquatic life such as fish and coral.

Excess nutrients can also lead to the growth of unwanted aquatic weeds. Additionally, lime, which is commonly applied along with fertilizers, can cause waters to become more alkaline. This can be harmful to aquatic animals.

Nutrients/Fertilizers –Best Management Practices

- **Till and Apply.** The preferred method of applying nutrients and lime is to till them several inches into the soil. This process of applying fertilizers is less likely to result in nutrients runoff than if fertilizers were simply spread on the ground without any tilling.
- **Hydroseed.** Hydroseeding, which is a process that applies a mixture of seed, fertilizer, and lime on the ground surface all at one time, is also a good management practice. Between hydroseeding and a no till application, hydroseeding is the preferred method.
- **Use in moderation.** Regardless of the fertilizer method it is best to only use as much as necessary, and to establish vegetation as soon as possible after the ground is disturbed or graded.

To reduce risk of fertilizer runoff from a construction site, use the following principles:

- **Store safely.** If fertilizers are stored on-site place them on top of double-layered plastic sheeting and protect them from contact with rainfall and wind as well as any other elements.
- **Use wisely.** Test the soil fertility to determine the specific nutrient needs at the site so fertilizer is not over-applied or over purchased. Time nutrient application approximately to meet plant needs. Whenever possible, work fertilizers into the soil to a depth of 4 to 6 inches.

USDA NRCS
United States Department of Agriculture
Natural Resource Conservation Service

Additional information about nutrients and soil testing is available from your local Soil and Water Conservation District through the offices of the Natural Resource Conservation Service Offices:

Saipan 236-0888

Tinian 433-9293

Rota 532-9491

PETROLEUM PRODUCTS

Petroleum products, which include gasoline, diesel fuel, kerosene, lubricating oils, and grease, are commonly used for equipment and tools at construction sites. Asphalt paving can also release various oils for a considerable time after it is applied.

Oil, waxes, and other petroleum products are toxic substances that can be nearly impossible to control once present in runoff, other than by very expensive measures. Once released they can contaminate environmental resources including water and soils as well as negatively impact plants and animals.

Petroleum products can be fatal to aquatic life and even in very small amounts can cause water to be unfit for drinking.

BMPs for Petroleum Product Use and Disposal

To prevent nonpoint source pollution from petroleum:

- Minimize your use of all petroleum products.
- Perform maintenance and fueling activities off-site at appropriate facilities when practical.
- Design staging areas to control runoff.
- Keep equipment properly maintained to prevent leaks.
- Plan access roads to minimize stream crossing.
- Whenever possible separate and recycle discarded oils, degreasers, solvents, antifreeze, and fluids. Check with BECQ's DEQ for disposal and recycling requirements for used oil.
- Use proper receptacles to dispose of contaminated wastes that cannot be recycled. Never dump petroleum product wastes into sewers, drainage channels, or the environment.

- Do your best to prevent a spill by taking special care when handling these products, keeping facilities and equipment well maintained, etc.
- Develop a spill response plan just in case a spill does occur.
- Post information about responding to spills in an accessible location and make sure that persons trained in spill response are present on site or on call at all times.
- Keep materials to clean up spills on-site and readily available.

When storing petroleum products on-site in above ground containers, you should:

- Keep lids securely fastened.
- Create a shelter around the storage area with cover and wind protection; however, **do not impair ventilation.**
- Line the storage area with a double layer of plastic sheeting or similar material to help contain spills.
- Build an impervious berm around the perimeter with a capacity 10 percent greater than the largest container.
- Clearly label all products with name and hazard warnings.
- Keep tanks off the ground to prevent static electricity. Consult DPS-Fire on proper bonding and grounding of tanks holding flammable liquids.

Petroleum Storage

All individual aboveground storage tanks containing more than 660 gallons of petroleum products or multiple tanks exceeding 100 gallons in capacity and containing more than 1,320 gallons in aggregate are subject to the federal Spill Prevention, Control and Countermeasure (SPCC) Regulation. The SPCC regulation and other guidance documents may be found at the EPA website http://www.epa.gov/oil-spills-prevention-and-preparedness-regulations.

You may also call the storage tank program at 664-8500/8511 for guidance.

A construction site may have the need to install aboveground storage tanks (ASTs), either temporary (for two years or less) or permanent. Regardless of the duration of the AST during the construction period, you will need to apply for a permit to install and a permit to operate. The spill containment requirements are:

- For all single wall ASTs, the spill containment needs to hold at least 110% of the tank maximum design capacity and have a minimum two inch freeboard. The containment dikes are to be either seamless, or have sealed seams. Any material used to seal containment dikes must also be compatible with the regulated substances stored in the AST system and be resistant to environmental degradation.
- For all double wall ASTs, containment dikes are to be a minimum of eight inches in height and the containment shall be either seamless or have sealed seams.

Reporting Petroleum Spills

Petroleum spills **must** be reported so the appropriate steps can be taken to minimize environmental damage. *If there is doubt about whether you should report a spill, it is always best to go ahead and notify the appropriate authorities. Please see "Reporting Requirements" on the next page for more details and contact numbers.*

Reporting Requirements

Any spills, regardless of the size, must be reported to the Emergency Management Office at 322-8001. For large spills, the Department of Fire and Emergency Medical Services (DFEMS) and DPS should be contacted as well at 911, and call BECQ from First Responder Tel. No. 287-8535 or 287-1497.

If a spill (on land or water) is large enough to cause a sheen on water, it must also be reported to the National Response Center (800) 424-8802.

Safety and Health

CNMI regulations, as enforced by Department of Fire and Emergency Medical Services (DFEMS), require you to:

- Keep flammable liquids in closed containers when not in use.
- Promptly and safely clean up and dispose of flammable or combustible liquids that have leaked or been spilled.
- Remove underground storage tanks once they are no longer needed for site construction (do not abandon these in place).

Disposal

Commonwealth law, as administrated by DEQ, prohibit the discharge of oil into or upon waters, lands, or storm drainage systems within the Commonwealth.

If you discharge, cause, or permit a discharge of oil, you may be liable to the Commonwealth for the cost of investigation, containment and cleanup, property damage, the loss of tax or other revenues, and the loss of natural resources that cannot be restocked, replenished, or restored. Civil penalties may also be assessed.

CONSTRUCTION CHEMICALS

At your site you are likely to use "construction chemicals" such as paints, cleaning solvents, asphalt products, soil additives used for stabilization, acid for cleaning masonry surfaces, and concrete curing compounds.

These chemicals can have significant impacts on water quality and aquatic life. If improperly stored, construction materials such as pressure-treated lumber can also cause pollution by leaching toxic chemicals into surface water and groundwater.

Other pollutants, such as wash water from concrete mixture, may also be present at your construction site and contribute to nonpoint source pollution. Substantial fish kills may occur if these materials reach the water.

BMPs for Construction Chemicals

To prevent construction chemicals from entering surface water, use the following principles:

Proper Storage of Construction Chemicals

- Store and isolate construction materials away from surface waters.
- Store chemicals in an area protected from the elements.
- Tighten closed lids.
- Be sure materials are correctly labeled and that all labels are intact.
- Check containers periodically for leaks or deterioration.

Proper Use of Construction Chemicals

- Read and follow all labels.
- Minimize use and disposal of potential pollutants by:
  1. Selecting latex instead of oil-based paints, and using all excess product;
  2. Re-using construction materials and containers; and
  3. Recycling solvents.

Proper Cleaning and Disposal of Construction Chemicals

- Never allow washwater to run into a storm drain or other surface water body.
- Properly dispose of all discarded construction chemicals (see solid waste section).
- Maintain and wash equipment and machinery in confined areas specifically designed to control runoff and prevent surface water contamination.
- When cleaning machinery, especially parts, use water-based methods whenever possible, such as high-pressure, high temperature waste washed or steam cleaning. You may use equipment washing detergents unless labels instruct otherwise.
- Do not discharge degreasing solvents into sewer, rather reuse or recycle these chemicals.
- Use dry clean-up method to minimize the quantity of surface runoff as well as the extent of contamination.
- Check with CUC to find out whether washwater may be discharged into the sanitary sewer after removal of soil (670-664-4CUC).
- Develop a spill response plan in case there is an accidental spill (see page 24).

Chemical Spill Reporting

Provide immediate notification of any chemical spill to the Emergency Management Office at 322-8001, DEQ at 664-8500, and to Department of Fire and Emergency Medical and BECQ First Responder Services (DFEMS) at 664-9003/287-8535/287-1497.

Refer to the federal Environmental Protection Agency's Reportable Quantities Listing to determine when a spill should be reported to the National Response Center (NRC). You can obtain this information by calling 1-800-424-8802 or visiting the NRC website at: http://www.nrc.ucsg.mil/index.htm.

IMPORTANT!

You must never dump wash out from concrete trucks or equipment into a sanitary sewer or storm drain, or onto a solid surface such as pavement that carries stormwater runoff.

Instead, dispose of wash out into either:

- A designated area that will later be backfilled,
- An area where the concrete wash can harden, and later be broken up for disposal in a dumpster or landfill; or a location not subject to stormwater runoff and more than 50-feet away from a storm drain, open ditch, wetland, or surface water.

Response Plan

Having a Spill Response Plan is highly recommended so that your employees will know how to contain spills and act to prevent additional pollution.

Response Actions in Case of a Spill:

1) If possible, shut off the source of the spill immediately.
2) Notify spill contact person & other emergency contact(s): owner, manager, etc.
3) Use absorbent materials, such as absorbent pads, floor sweeping compound or kitty litter to contain spills that are relatively small in nature and where the spilled chemical and its hazardous properties have been properly identified and assessed.

4) Use appropriate personal protective equipment depending on the spill material.
5) Cover/block any drains/catch basins in the spill area to prevent material from entering into the stormwater system, sanitary sewer system or septic system.
6) If possible, clean up the spill using absorbent materials. Collect these absorbent materials and treat as hazardous waste.

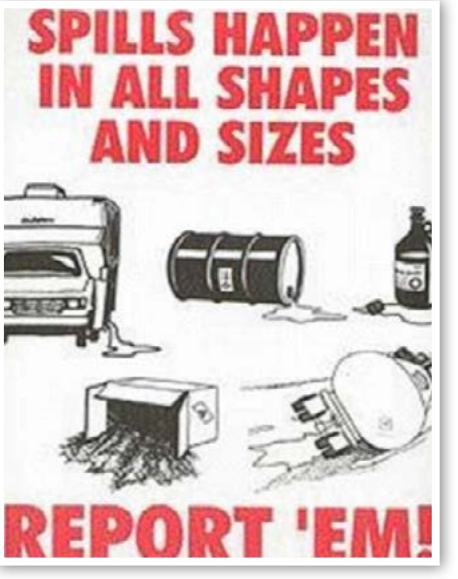
It is important that ALL EMPLOYEES be trained to carry out the spill response actions and that each employee be familiar with the site drawing that shows where hazardous materials/substances, spill kit(s), and all potentially susceptible and vulnerable storm drains/catch basins are located.

Reporting Spills

Reporting a hazardous substance release or oil spill takes only a few minutes. To report a release or spill, contact BECQ at 664-8500.

You may also report a release or spill to the federal government's centralized reporting center, the National Response Center (NRC), at 1-800-424-8802. The NRC is staffed 24 hours a day by personnel who will ask you to provide as much information about the incident as possible. Please include the following:

- Your name, location, organization, and telephone number;
- Name and address of the party responsible for the incident; or name of the carrier or vessel, the railcar/ truck number, or other identifying information;
- Date and time of the incident;
- Location of the incident;
- Source and cause of the release or spill ;
- Types of material(s) released or spilled;
- Quantity of materials released or spilled;
- Medium (e.g. land, water) affected by release or spill;
- Danger or threat posed by the release or spill;
- Number and types of injuries or fatalities (if any);
- Weather conditions at the incident location;
- Whether an evacuation has occurred;
- Other agencies notified or about to be notified; and
- Any other information that may help emergency personnel respond to the incident.



Managing Hazardous Materials in the Workplace

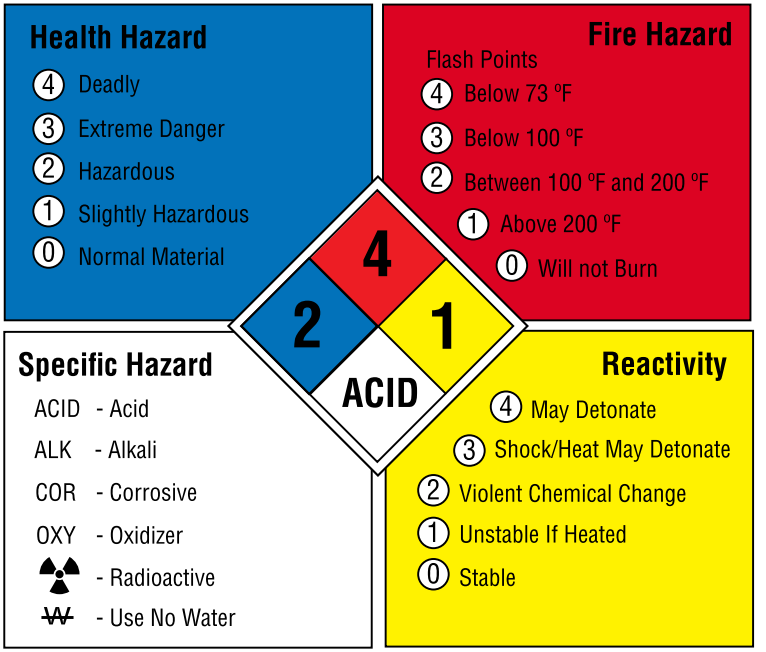
As mentioned previously, the correct use, storage, and disposal of hazardous materials is key to construction site chemical control. The development of emergency procedures to prepare for spill, fire, or release of hazardous material to the environment is also a critical component of construction site chemical control. It is also vitally important that both information on the potential hazards of these materials and the emergency spill response plan be communicated to employees.

To ensure workers' safety in general you should:

- Educate all construction workers about proper materials handling and spill response procedures;
- Distribute and/or post information regarding chemical control; and
- Provide construction employees with the personal protective equipment (e.g., gloves, respirators, etc.) that is necessary to protect against the hazards of the chemicals used or to which they are exposed.

Safety and Health

The Hazard Communication Standard, enforced by the federal Occupational Safety and Health Administrations (OSHA), requires you to:



- Evaluate potentially hazardous materials to determine if they are "hazardous" as defined by OSHA (exceptions include hazardous waste, radiation, and biological wastes);
- Compile a list of hazardous materials using the identity on the material safety data sheets (MSDS);
- For each hazardous chemical, obtain and make the MSDS accessible to employees;
- Original label must not be removed or defaced;
- Label each container with appropriate warnings;
- Develop and make accessible a written hazard communication program; and
- Give all affected employees information and training regarding the Standard's requirement and the hazards associated with the materials with which they will work.

UNEXPLODED ORDNANCE (UXO)

In CNMI, unexploded ordnance (UXO) poses a unique hazard. UXO may be uncovered during excavation operations. If you find UXO, remember the **3 Rs: Recognize, Retreat, Report.**

BECQ-DEQ requires that UXO or suspected hazardous waste from past military activities be reported immediately. For the safety of site workers, ensure that there are plans in place to appropriately respond to these materials in the event that they are discovered.

DEMOLITION ACTIVITIES

Demolition activities can often result in significant chemical contamination due to the crushing of old storage tanks, appliance and machinery, asbestos, lead paint, household hazardous waste, oil drums, contaminated debris, etc.

Demolition activities create significant potential for contamination of surface runoff and ground water, and air emissions. Each of these environmental impacts is regulated. Demolition plans should consider the potential for their occurrence and take steps to reduce pollution wherever practicable.

FINAL WORDS

Nonpoint source pollution is the biggest threat to water quality in the Commonwealth and it is not easy to regulate. Water is a very valuable resource and to protect it we must all do our part to prevent and reduce nonpoint source pollution from our activities. You can start to do your part by putting the measures discussed in this handbook into practice.

You are encouraged to obtain additional information on the pollution prevention techniques and water quality issues presented in this handbook. Information is readily accessible through BECQ as well as on the internet or at a local library.

As indicated throughout the document, additional information pertaining to regulations can be provided by the state and local agencies referenced in this manual.

Please don't hesitate to contact BECQ if you have questions or concerns!

Thank you for doing your part!

CHECKLIST OF CHEMICAL CONTROL METHODS

Pesticides

Storage

- Store all pesticides in their original container on steel shelves in a locked area that is protected from the elements.
- Keep the lids tightly closed.
- Keep all labels intact.
- Check for leaks or deterioration.
- Maintain a list of products in storage.
- Place warning signs around storage areas.

Use

- Read labels and follow directions. Remember to use licensed applicators for regulated products.
- Don't use more than needed.
- Don't apply in or near water bodies.
- Take preventative measures to prevent spills when transferring contents from a container. Use a funnel to facilitate clean transfer if necessary.
- Clean up any spill immediately and properly dispose of cleanup materials.

Disposal

- When rinsing containers or applicators do not dispose of rinse water down drains, septic systems, sewers, or into or near surface waters.
- When finished with plastic pesticide containers, triple rinse, poke each side and bottom, and dispose of properly.

Petroleum Products

- Perform maintenance and fueling activities off-site at appropriate facilities, when possible.
- Locate on-site fuel and vehicle maintenance staging areas away from all drainage courses.
- Design staging areas to control runoff.
- Keep equipment properly maintained to prevent leaks.
- Plan access roads to minimize stream crossings.
- Keep separate and recycle discarded oils, degreasers, solvents, antifreeze, and brake fluids.
- Use proper receptacles to dispose of contaminated wastes that cannot be recycled.
- Never dump petroleum product wastes into sewers or other drainage channels.
- Develop a spill response plan and post on-site.
- Keep materials for cleaning up spills on-site and readily available.

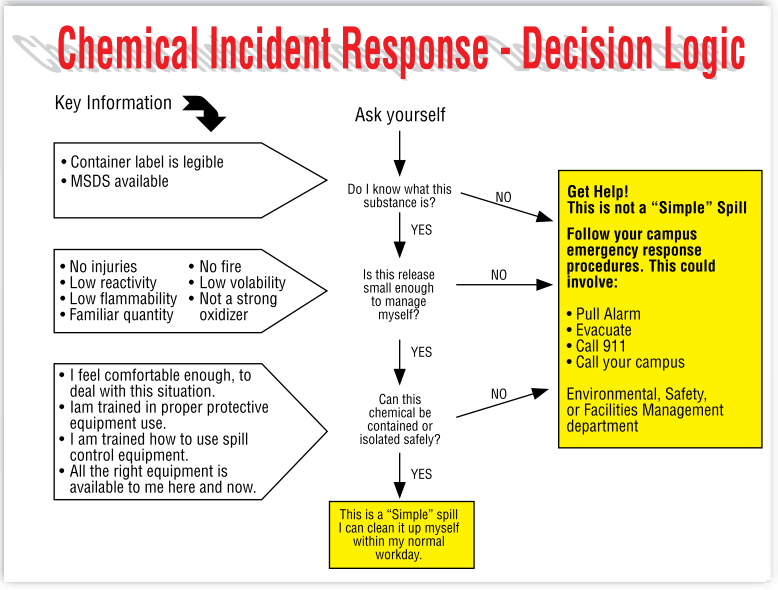
For above-ground petroleum containers, you should:

  - Keep lids securely fastened.
  - Line storage area to help capture spilled materials.
  - Construct an impervious berm around the perimeter of the containers.

- Clearly label all products.
- Keep tanks off the ground.

Construction Chemicals

- Store in protected areas.
- Read and follow all labels.
- Select latex instead of oil-based paints, and use all excess.
- Reuse construction materials and containers.
- Recycle solvents.
- Never allow washwater to run into a storm drain, ditch, or surface water.
- Properly dispose of all discharged construction chemicals.
- Maintain and wash equipment and machinery in confined areas specifically designed to control runoff.



- Use water-based methods to clean machinery whenever possible.
- Do not discharge degreasing solvents into sewers (reuse or recycle).
- Check with CUC before disposing of washwater into sanitary sewer.
- Develop a spill response plan.

Solid Waste

- Plan for and purchase only essential construction materials.
- Reuse excess or discarded materials on site, whenever possible.
- Recycle discarded materials, especially scrap metal, wood, cardboard, and aluminum cans.
- Consider giving leftover scrap wood to neighbors or a nonprofit organization.
- Preserve existing vegetation to reduce vegetative waste.
- Recycle vegetative debris by chipping and using materials as mulch on-site.
- Encourage suppliers to discontinue unneeded packaging.
- Provide covered containers for the receipt of garbage and other waste.
- Dispose of all debris and waste at frequent and regular intervals.
- Provide toilet facilities for employees.

Hazardous Materials

- Ensure that all construction workers are educated about proper materials handling and spill response procedures.
- Distribute and/or post information regarding chemical control.
- Provide construction employees with the required personal protective equipment.
- Keep copies of Materials Safety Data Sheet on file.

CONTACT INFORMATION

NOTE: If in doubt about which agency to contact regarding a regulatory requirement, or more generally how best to protect human health and the environment, call DEQ.

Emergency	911
BECQ- Division of Environment Quality	(670) 664-8500
BECQ- Division of Coastal Resources Management	(670) 664-8300
Emergency Management	(670) 322-8001 or 322-8002
Department of Public Safety- FIRE	(670) 664-9003 or 664-9005
Natural Resources Conservation Service	(670) 236-0888 in Saipan (670) 433-9293 in Tinian (670) 532-9491 in Rota

Waste Management Contact Information

• Rising Star/Mans Joint Venture	Tel. 285-9664
• Art Man Corporation	Tel.233-4321
• Ericco	Tel.322-6732
• Triple Star	Tel. 323-0362
• FSM Recycling	Tel. 322-2700 Fax 322-2701

NOTES:

Guide to Control and Reduce Nonpoint Sources of Pollution

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