Missouri Department of Natural Resources

Preventing Pollution at Rock Quarries

Division of Environmental Quality fact sheet

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A Guide to Environmental Compliance and Pollution Prevention for Quarries in Missouri

Recycled Paper

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Members of the Missouri Limestone Producers Association kindly assisted in developing this document. Their help is very much appreciated.

Preventing Pollution at Rock Quarries

As environmental protection becomes more and more important across the nation, industries of every type are faced with some big questions:

- What environmental regulations apply to me and my facility?
- How do I comply with those regulations?
- Are there things I can do to reduce the regulations I must comply with?
- How can I protect myself from fines and liability?
- How do I protect myself and my workers from environmental hazards at my business?

This publication can help owners and operators of rock quarries in Missouri answer some of those questions. The guide sheets provide basic information about regulatory requirements and suggestions for protecting yourself, your workers and the environment through
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pollution prevention.

Each guide sheet in this publication deals with a separate issue that rock quarries may face. The guides will not answer every question. After reviewing them you should be able to decide if you need more information or assistance on a particular issue. The topics are listed on the back of this page.

The Missouri Department of Natural Resources can help people comply with environmental regulations and find ways to prevent pollution. If you need assistance, call 800-361-4827.

Preventing Pollution at Rock Quarries Guidance

For More Information

Missouri Department of Natural Resources
Division of Environmental Quality
P.O. Box 176
Jefferson City, MO 65102-0176
800-361-4827 or 573-751-6892
www.dnr.mo.gov/env/index.html

Pollution Prevention

Rock quarry and stone operations deal with many things that can affect the environment. Materials such as dust, contaminated storm water and used oil can harm the environment and people if they are not properly managed. State and federal environmental regulations explain what legally can and cannot be done with these materials. The regulations describe how pollution should be controlled, stored, treated or disposed. A better solution is to prevent the waste or pollution.

What is Pollution Prevention?

Pollution prevention is simply not making the waste or pollutant in the first place. It means doing what we can to reduce the amount and toxicity of the pollution we generate. Preventing pollution may be something as simple as using a catch-basin to prevent spills, or something as complex as redesigning your operation to increase efficiency and reduce waste. Simple things like choosing non-hazardous solvents can protect the environment and reduce the number of environmental regulations you face. Pollution prevention means thinking about the environmental impact of your actions, and trying to limit that impact.

Why Prevent Pollution?

When we generate waste or pollution, we must safely and legally manage that waste or pollution. Whether it is household trash or waste from a business, managing wastes costs money. And usually the things we discard are materials we paid for when we got them. A good example is paper towels. We buy them, use them once, then pay again to have them disposed of. If we reduce the amount of waste we generate, we save money. It's as simple as that. Reducing costs is a major reason to prevent pollution. Here are a few others:

- Improved work environment and worker safety.
- Reduced liability.
- Increased efficiency.
- Fewer regulatory requirements.
- Better environmental protection.
- Enhanced marketing and public relations opportunities.

What Can Be Done At Rock Quarries?

There are many ways to prevent pollution at rock quarries. In addition to the quarrying activities, maintenance and repair of vehicles and machinery can create wastes as can office operations. Each of the guide sheets has suggestions on ways to prevent pollution, but here are a few general tips:

- Keep work areas clean and well organized to help prevent accidents.
- Use drip pans and splash guards where spills frequently occur.
- Fix leaks immediately.
- Purchase the largest practical container (containers usually end up as waste), but do not purchase more than is needed.
- Purchase the least toxic or hazardous product available. Check the material safety data sheets for products you purchase. If the product is toxic or hazardous, ask your supplier for alternatives.
- Use the oldest items first (first-in, first-out).
- See if the supplier can take back excess or unneeded materials.
- Include the cost of disposal when making purchasing decisions. What looks like the cheapest option may cost more because of disposal or other management costs.
- Store materials in a way that keeps them from being damaged.
- Inspect storage areas regularly for leaks.
- Make sure all items are clearly labeled. Store products in original containers.
- Store wastes separately and be sure they are properly labeled to make it easier to reuse or recycle them.
- Store items that could leak in a place where leaks will be contained and easily spotted.
- Make a list of your wastes. Then try to find a way to eliminate each of them. For example, if you throw away paper towels, consider using washable shop rags.

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401 Permits
401 Certifications

Section 404(a) of the Clean Water Act, requires you to get a Federal 404 Permit from the U.S. Army Corps of Engineers (Corps) before excavating in or putting materials or fill into jurisdictional waters of the United States. The State if Missouri requires a 401 Certification for any project that needs a Federal 404 permit.

“Waters of the United States” are:

- Lakes.
- Rivers.
- Streams (including dry streams).
- Abandoned quarry pits.
- Wetlands (including dry wetlands).

Indications that a wetland exists in a seemingly dry area include:

- Standing water early in the year for a week or more.
- Black, stained leaves on the ground.
- Trees with swollen trunks at ground level.
- Area contains water loving plants.

The following are not generally considered “Waters of the United States”:

- Non-tidal drainage and irrigation ditches.
- Artificially irrigated areas.
- Artificial lakes or ponds.
- Artificial reflecting or swimming pools.
- Water-filled depressions.

Missouri is split into different U.S. Army Corps of Engineers Districts. Use the map located at www.dnr.mo.gov/env/wpp/401/corps-map3.gif to find out which district covers your area. Contact the Corp to determine if your project will require a 404 permit. Contact the Missouri Department of Natural Resources Water Pollution Control Branch to obtain a 401 Certification if your project requires a 404 permit.

Remember

- If you plan to excavate or fill in waters of the United States, contact the U.S. Army Corps of Engineers and get any necessary Federal 404 Permits before you begin.
- If your project requires a Federal 404 Permit, contact the department and get the required 401 Certification

Additional Resources:

See the Web page *401 Water Quality Certification* located at www.dnr.mo.gov/env/wpp/401.

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Air Quality Permits

Quarrying and stone processing facilities generate dust, also called particulate matter, with diameter less than or equal to 10 micrometers. Regulators call this dust PM10. PM10 can cause lung damage. A National Ambient Air Quality Standard, also known as NAAQS, has been established to limit PM10 concentrations in the air and protect public health.

In Missouri, sources that could potentially emit large amounts of PM10 need a construction permit before building. This means that you will likely need a permit if you plan to start a new quarry and stone operation. Also, you may need a permit if you plan to make changes at your existing quarry and stone operation. To get a construction permit, you will need to send a completed application to the air pollution control agency with jurisdiction in your area.

City of St. Louis
Division of Air Pollution Control
314-613-7300

St. Louis County
St. Louis County Dept. of Health
314-615-8983

City of Springfield
Air Pollution Control Authority
417-864-1000

Kansas City
Kansas City Health Department
Air Quality Section
816-513-6314

Elsewhere in Missouri
Missouri Dept. of Natural Resources
Air Pollution Control Program
573-751-4817

The application forms include an Application for Authority to Construct, Emissions Unit Information forms, a site layout form and worksheets for haul roads, storage piles and fuel storage tanks. Information needed with these forms includes a drawing of the site layout, a listing of process equipment that will be used with its manufacturer; date manufactured and serial number; and the rated design performance of the equipment. If you do not have the equipment, give complete specifications for the equipment you plan to use. Equipment manufactured after Aug. 31, 1983, is subject to a federal New Source Performance Standard, or NSPS, that limits opacity from operating the equipment, so the date of manufacture needs to be shown for the permit to incorporate the standard if it applies. You will also need to report what you expect will be the annual rock production at the site.

The department's Air Pollution Control Program, or APCP, offers an electronic construction permit application for rock quarries that may be used for the initial permit application or amendments. There is a Microsoft® Excel® spreadsheet where data about the proposed operation is entered and the program calculates the ambient air impact from the proposed operation and determines if production must be limited to meet air quality standards.
The application itself is an electronic fill in form. The applicant must still submit the printed application form signed by a responsible official as well as a site layout diagram.
The Air Pollution Control Programencourages electronic applications because they take less processing time.

Operators may obtain a construction permit that limits emissions to below 15 tons per year, the PM10 de minimis. This is called a synthetic de minimis permit. The benefit to an operator is that the permit limit means no operating permit is required, providing that none of the equipment is subject to the NSPS. Also, the full EIQ is only required every six years. These permits require monthly records of rock processed and the resulting emissions to demonstrate that emissions never exceed 15 tons of PM10 in any 12 month period.

The construction permit allows for construction of specified equipment at a specific site. You must not use different equipment or move the equipment to a different site unless you have the proper permits to do so. If you want to use equipment at more than one site and both sites have a permit, you must submit a Portable Source Relocation Request at least seven days before you plan to move the equipment. If you wish to move a piece of equipment from a permitted site to an unpermitted site, you must submit a construction permit application form and a Portable Source Relocation Request including maps of the new area at least 21 days before you plan to move the equipment.

When you have a construction permit you must document the emissions rate and keep a copy at the plant in case of an inspection. If additional equipment is added to the installation no permit is required if it emits less than 1 lb. per hour of PM10. Also, if you have a synthetic de minimis permit, you still have to keep your total actual emissions of PM10 under 15 tons in any 12 months or you have to get an operating permit. If you were exempt from the operating permit requirement because of equipment age, and the added equipment is new enough to be subject to the NSPS, you will be required to obtain an operating permit, unless it is a portable plant.

In addition to your construction permit, an operating permit may also be required. Operating permits are required if your facility has large potential emissions or if any of your equipment is subject to the New Source Performance Standards, or NSPS. Plants with portable permits are not required to have an operating permit. If an operating permit is required, an EIQ is required annually or every three years, depending on the type of permit. If you need help determining whether your operation needs a permit, or if you need help completing an application, contact the department at 800-361-4827.

Remember

- New facilities need to obtain construction permits. Some modifications also require a construction permit.
- A Portable Source Relocation Form must be submitted before moving permitted portable equipment to a different site.
- EIQ's with emission unit information are submitted annually, once every three years or once every six years, depending on the facility's permit type. Fees are paid every year on emissions calculated from rock processed.
- With some exceptions, you will need to obtain an operating permit for your facility.

Pollution Prevention Options

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

- Use water sprays or chemical suppressants to keep materials and roads wet, but use only enough water to dampen the material. Avoid having runoff.
- Limit drop heights of materials.
- Cover trucks.
- Enclose material at transfer points such as on conveyors and in screening operations.

For More Information

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Antifreeze

Antifreeze is usually made of ethylene glycol, corrosion inhibitors and foam controllers. Ethylene glycol is toxic if ingested. It can be particularly hazardous because animals and children may be attracted to its sweet flavor. If they drink the ethylene glycol it could cause coma or death. Some antifreeze is made of propylene glycol. This material is less hazardous to humans and animals than ethylene glycol.

The used antifreeze from a vehicle can hold contaminants that it has picked up from the vehicle engine. For example, used antifreeze may contain lead because the antifreeze has dissolved some of the lead solder in the radiator. Waste antifreeze is not a listed hazardous waste under the federal hazardous waste regulations, but it may be a hazardous waste depending on the contaminants it has picked up. The test used to find out if used antifreeze is a hazardous waste is called the toxicity characteristic leaching procedure, or TCLP. See the guide sheet on hazardous waste for more information.

Recent studies have shown that antifreeze from cars and trucks manufactured after 1995 is not hazardous waste. This is primarily because less lead is used in radiator construction. Used antifreeze is more likely to be hazardous if it was used in heavy equipment such as bulldozers.

This means that the antifreeze from late-model cars and trucks at your operation that has not been mixed with other antifreeze or with other hazardous wastes does not need to be tested. You can assume that it is not hazardous and need not test it to prove that. However, the used antifreeze from heavy equipment or industrial sources will need to be tested to see if it is hazardous waste unless you have some other way of knowing that it is or is not hazardous. If you wish, you can assume the antifreeze from your heavy equipment is hazardous without testing it and dispose of it as hazardous waste.

There are several ways to safely and legally manage used antifreeze:

- Recycle the antifreeze at your facility (on-site recycling).
- Send the antifreeze to someone else to either recycle or dispose of (off-site recycling or disposal).
- Discharge to public wastewater treatment plant if the plant has approved the discharge.

Recycling

The Missouri Department of Natural Resources encourages antifreeze recycling. You can purchase or lease several types of antifreeze recycling equipment. Recycling hazardous wastes on-site requires a type of approval from the department called resource recovery certification. If you recycle antifreeze only from late-model cars and trucks, you do not need a resource recovery certification to recycle antifreeze on-site. If you want to recycle antifreeze from heavy equipment, you must get a resource recovery certification. Call the department at 800-361-4827 for more information.

Your recycling unit will create waste such as distillation residues and used filters. You must determine if these wastes are hazardous before disposal. See the *Hazardous Wastes* guide sheet in this publication for more information. If the residue is non-hazardous, it can be sent to the landfill with your regular trash. However, liquids cannot go to the landfill.

There may be businesses that will bring equipment to your facility and recycle your antifreeze on-site. Again, if the antifreeze is from late model cars and trucks, these companies do not need resource recovery certification. If it is from heavy equipment, these companies will need resource recovery certification to recycle your antifreeze.

Off-site Recycling or Disposal
There are companies that pick up used antifreeze for off-site recycling or disposal. If your used antifreeze is a hazardous waste, the transporter must have a Missouri license to transport hazardous waste and the waste must have a hazardous waste manifest with it. Make sure the facility you send it to has a resource recovery certification or a hazardous waste treatment, storage and disposal permit.

Discharge to wastewater treatment plant (pouring it down the drain)
If the drains at your facility go to a wastewater treatment plant (not a septic system), you MAY be able to pour antifreeze down the drain if you have permission from the plant. Pouring something down the drain is called a discharge. Some plants will not allow discharges of used antifreeze. Large quantities can harm the treatment plant. Also, the wastewater treatment plant may not be able to remove all the contaminants from the used antifreeze. The contaminants then enter lakes, streams and rivers.

- **DO NOT** discharge antifreeze to a wastewater plant without permission.
- **DO NOT** discharge any hazardous waste, including antifreeze, to a septic system.
- **DO NOT** dispose of antifreeze in or on the ground, down storm drains or into streams or lakes.

Pollution Prevention Options

- Make sure hoses, gaskets and seals are in good condition.
- Replace antifreeze only when necessary.
- When good antifreeze must be removed for repairs, save it and reuse it in the system.

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Backflow Prevention

Backflow Prevention

In 1997, the Missouri Department of Natural Resources revised a drinking water regulation entitled “Backflow Prevention.” This revised regulation places certain responsibilities on water suppliers to ensure that customer facilities identified as actual or potential backflow hazards provide the necessary protection to prevent contaminants from entering the public water system.

What is Backflow?

Backflow is defined as the unwanted reversal of flow in a water distribution system. Due to changes in the hydraulic pressure in a water distribution system or a piping system inside a customer’s premises, backflow occurs on a regular basis.

The polluting substance, usually a liquid, tends to enter the potable water supply if the net force acting upon the liquid acts in the direction of the water supply. Therefore, two factors are essential for backflow to occur. First, the normal direction of flow in the distribution system must be interrupted. Second, there must be a link or connection between the potable system and the source of contamination. Backflow only becomes a serious problem when there are cross connections within the water distributions system.

Public Health Significance of Cross Connections

A cross connection is a physical link between a source of pollution or contamination with a potable water supply.

Public health specialists have long been aware of the threat to public health posed by cross connections. Education is the most important factor in cross connection control. No one would intentionally connect plumbing fixtures, equipment, etc. to their water supply if they knew it would contaminate their drinking water. But it happens thousands of times a day.

Various court decisions have held water suppliers responsible for the delivery of safe water to consumers. But the safety of our drinking water supply can be jeopardized at any location, at any time because of the frequency of plumbing defects and cross connections. Due to frequent changes in piping systems, an effective cross connection control program, including continued surveillance of the public water system, is necessary to prevent backflow incidents.

Components of an Effective Cross Connection Control Program

The first step in preventing backflow incidents is enacting local rules that grant the water supplier the authority to enforce the cross connection control program. For the water supplier to comply with the state backflow prevention regulation, the local rules should include the following provisions:

- A requirement for annual testing of assemblies and inspection of air-gaps.
- Authority to enter customer premises for purposes of inspection.
- Authority to terminate water service for failure to comply.

Another responsibility of the water supplier is to notify customers, where backflow hazards exist, that they must comply with the local rule. Once these customers have been notified, the supplier must maintain records of inspections, exemptions, or installation of assemblies. A local program may not be less stringent than state regulations. Local plumbing codes may require additional backflow prevention devices.

Methods of Backflow Prevention

The department's Public Drinking Water Branch maintains a list of backflow prevention assemblies approved by the Foundation for Cross Connection Control and Hydraulic Research at the University of Southern California www.usc.edu/dept/fccchr/. The following methods of backflow prevention meet the requirements of the state backflow prevention rule.

Air-gap: An air-gap is the most positive method of backflow protection. It is a physical separation between the water supply and the customer's internal piping system. The distance for an air-gap must be at least two times the diameter of the pipe. For example, a two-inch separation is required for a one-inch water supply pipe.

Reduced Pressure Principle Assembly: A reduced pressure principle assembly is the highest level of mechanical backflow protection. The reduced pressure principle assembly has a hydraulically operated relief port located between two spring loaded check valves. A drop in pressure from the supply or an increase in back pressure from the customer's facility will cause the check valves to close and the relief port to open, creating an air-gap within the assembly. If either check valve becomes fouled by debris, the relief port will also open. The drawback to using an reduced pressure principle assembly is that it will lower the pressure available to the customer's premises.

Double Check Valve Assembly: The double check valve assembly is designed for low hazard protection only. The double check valve assembly has two spring valves that act independently to provide protection from back pressure and back siphonage. The drawback to double check valve assemblies is that both check valves are susceptible to fouling by debris in the water system, which hinders their function and allows backflow to occur.

Testing/Inspection Requirements

The function of all backflow prevention devices must be reviewed annually. Air-gaps may be inspected by the water supplier. A state-certified backflow prevention assembly tester must perform the specific testing procedures required to verify the proper function of reduced pressure principle assemblies and double check valve assemblies. The Public Drinking Water Branch maintains a list of certified backflow prevention assembly testers.

For more information
Missouri Department of Natural Resources
Water Protection Program, Public Drinking Water Branch
P.O. Box 176
Jefferson City, MO 65102-0176
800-361-4827 or 573-751-5331 office
573-751-3110 fax
www.dnr.mo.gov/env/wpp/index.html

Endangered Species

Endangered species are plant and animal species whose prospect for survival is in immediate jeopardy. There are laws to protect these species and, in some cases, their habitat. This means that some activities may not be allowed in areas where endangered species live. This may affect plans to expand operations or site a new quarry.

The Missouri Department of Conservation, or MDC, is responsible for collecting and managing information on the location and status of endangered species in the state. There are currently 62 species of plants and animals that are listed as state endangered. The federal list includes 25 threatened or endangered species found in Missouri.

The restrictions, which could affect your project, depend on whether the species is a plant or animal, whether the land is private property and whether your project receives any federal funds. Contact MDC's policy coordination section at 573-751-4115 for general information.

The MDC Web page, *Endangered Species in Missouri*, is located at www.mdc.mo.gov/nathis/endangered/. Links to articles, publications, databases and other sources of endangered species information are provided at this site. There is also a link to the *Missouri Species of Conservation Concern Checklist (*Endangered Species Checklist*),* a reference work listing all of the current plants and animals of concern, giving both the federal and Missouri status. This list is updated annually.

When you are developing permit applications for a new or expanded site, you may be required to determine if there are endangered species on the property. To get an environmental review of a piece of property, mail a written request to MDC. If there are no endangered species associated with the property, MDC will issue a letter stating so. If you are planning to purchase property, you may want to have an environmental review for endangered species, even if you are not required to do so.

It is important to clearly identify the location of the property in your written request to MDC. Include as much as possible of the following information: county, topographic quadrangle map designation (if known), legal description (section, township, range), acreage, and permanent landmarks such as rivers and roads. Include a copy of a map (of suitable scale) with the location of the property drawn in and labeled. Send the request to:

Policy Coordination Section Chief
Missouri Department of Conservation
P.O. Box 180
Jefferson City, MO 65102-0180

Remember

- It is illegal to harm federally listed endangered species or their habitat.
- It is illegal to harm species that are listed in Section 4.111 of Missouri's Wildlife Code.
- Contact the Missouri Department of Conservation for information on endangered species in Missouri.

Pollution Prevention Options

Preventing pollution instead of treating or disposing of it can help to protect habitats. Here are some suggestions:

- Learn more about rare and endangered species in your area of the state. Find out how you can improve habitat for them.
- Properly design, construct and maintain detention basins to capture sediment. Sediment is a major pollutant of aquatic environments.
- Re-vegetate disturbed areas as soon as possible and in accordance with your permit. Use native plants from a reputable source that provide food and cover for wildlife.
- Avoid spilling oil, grease and gasoline during vehicle and equipment maintenance activities.
- Maintain appropriate spill containment equipment and train employees on proper usage.

Additional Reference

The state regulation dealing with endangered species is 3 CSR 10-4.111 of the *Missouri Code of Regulations* located on the Web at www.sos.mo.gov/adrules/csr/current/3csr/3c10-4.pdf.

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Emergency Planning and Community Right-to-Know Act and Tier II Reporting

Most rock quarries use chemicals that can pose a serious risk to human health and the environment, especially in the event of a fire, flood or other emergency. Emergency responders are at particular risk if they respond to an emergency where hazardous materials are stored.

In 1986, the federal government passed the Emergency Planning and Community Right-to-Know Act, or EPCRA, sometimes called SARA Title III. Missouri also has its own Community Right-to-Know Law. These laws require states, communities and businesses to work together on emergency plans for accidental chemical releases, emergency notification procedures and compiling of an inventory of hazardous chemicals for planning and public review.

EPCRA is really made up of two parts, the Emergency Planning part and the Community Right-to-Know part. The first part covers what is known as Tier II reporting and deals with emergency planning issues and the second part is known as Form R reporting which focuses on reporting how much toxic chemicals are being released to the environment. This guide sheet focuses on the Emergency Planning or Tier II part.

In Missouri, EPCRA is administered in part by both the Missouri Department of Natural Resources and the Missouri Emergency Response Commission, or MERC, which is part of the Department of Public Safety. MERC maintains a Web site where information about Tier II reporting can be downloaded and electronic Tier II's can be submitted. Visit the Web site at www.sema.dps.mo.gov/mercc.htm.

Missouri's law requires markings on buildings, rooms and containers where hazardous chemicals are present. Markings are to conform to the National Fire Protection Association, or NFPA, 704 standard. Missouri regulation also states that you must notify the fire department within 24 hours of bringing 100 pounds or more of explosives on-site. If you have this amount of explosives on-site for more than 15 days you must file a Tier II report as soon as possible.

To comply with the emergency planning part of EPCRA you need to first find out if you have a regulated material in a regulated quantity. You can contact either the department, MERC or review the Internet site above to get a list of these materials. (See the Title III List of Lists on MERC's Web page.) Depending on the type and quantity of material, you may need to

- Complete a Tier II Form.
- Designate a facility coordinator to work with the Local Emergency Planning Committee, or LEPC.
- Notify the department and the National Response Center if you have a release (spill).
- Notify the fire department within 24 hours of bringing 100 lbs. of explosives on-site.

Tier II Forms

Tier II forms must be submitted on or before March 1 for the previous reporting year, except for explosives, as mentioned above. As also stated above, to get a list of substances that require a Tier II report and the threshold planning quantities, or TPQ, or to get a Tier II form and instructions, contact MERC at 1-800-780-1014.

If you need to submit a Tier II, you must also pay a fee. The fee is $100 for the first three chemicals and then $20 for each reported chemical over three. Most of this money is used to support local efforts to prevent and prepare for chemical hazards and for hazardous materials training.

As mentioned, the Tier II form with the fee is submitted yearly on or before March 1 to the Missouri Emergency Response Commission. You must also send copies of the Tier II form to your LEPC and the appropriate local fire department.

Facility Coordinator

If you have an extremely hazardous substance in amounts over the threshold planning quantity you must choose a person at your facility to work with LEPC. This person will be the first emergency contact listed in the Tier II form.

Spill Notification

If you have a spill (release) of an extremely hazardous substance or hazardous substance in excess of the reportable quantity, or RQ, you must call the Department of Natural Resources' Spill Line at 573-634-2436 and call 911 (or the appropriate emergency response number). You must also follow up with a written report to MERC and LEPC discussing the response measures taken and any health impact information.

Form R

This is the Community Right-to-Know part of EPCRA. This part requires companies to report how much toxic chemicals they release into the environment or manage on- or off-site as wastes. The reporting requirements are for manufacturing companies with Standard Industrial Classification, or SIC, codes between 20xx and 39xx, as well as a few others like metal mining (SIC 10xx) and electric utilities (SIC 49xx). Rock quarries have an SIC code in the 14xx series and therefore are not required to report under Form R.

Remember

- If you have 10,000 pounds of a chemical requiring an MSDS under OSHA hazardous communication standard, or if you have over 500 pounds (or the TPQ) of an extremely hazardous substance, or more than 100 pounds of explosives on-site for more than 15 days, you must submit a completed Tier II form to the fire department, LEPC and MERC.
- Even if you are not required to file an emergency plan, you should have an emergency plan at your facility and discuss it with you local emergency responders.

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Hazardous Waste

Some activities at your rock quarry may generate hazardous waste. It is very important that you find out whether your wastes are hazardous and that you follow the law when managing the wastes.

What is a Hazardous Waste?

A waste is a material that you no longer use and will discard. It can be a solid, liquid or gas. A waste is hazardous if it has properties that could be dangerous to human health and the environment.

It is your responsibility to find out whether your waste is hazardous. A waste is hazardous if

- It is listed as a hazardous waste in the federal regulations;
- It exhibits a hazardous characteristic;
- It is a hazardous waste by Missouri law; or
- It is a mixture of a listed hazardous waste and any other waste.

Listed Hazardous Waste

The federal government publishes lists of hazardous wastes. There are four different lists: the F list, the K list, the P list and the U list. Wastes that are on the P list are called “acutely hazardous” and are regulated more strictly than the other types.

Characteristic Hazardous Waste

Some wastes that are not on the lists may still be regulated hazardous wastes because they have characteristics that make them hazardous. There are four characteristics:

- **Ignitable** - A waste with a flashpoint of less than 140° F, or solids that catch fire easily and burn so rapidly they create a hazard. Some solvents are ignitable.
- **Corrosive** - A waste with a pH less than or equal to 2.0 or greater than or equal to 12.5. (Strong acids and bases)
- **Reactive** - Wastes that are normally unstable, react violently with water, can explode or release poisonous gases.
- **Toxic** - Wastes with high concentrations of certain organic chemicals, heavy metals or pesticides when tested by the toxicity characteristic leaching procedure, or TCLP. Federal regulations contain a list of toxic chemicals.

Missouri-specific Hazardous Waste
An individual state can regulate wastes as hazardous even if they are not on the federal list. For example, in Missouri certain dioxin wastes are regulated at smaller quantities than in the federal rules.

Mixed Waste
If you mix any waste with a waste that is on the F, P, K, or U list, all of it is hazardous, even if there is only a very small amount of listed hazardous waste in the mixture. For example, if you put a cup of waste toluene in with 55 gallons of water, you will have a little over 55 gallons of hazardous waste.

Is Your Waste Hazardous?

To find out if your waste is hazardous, check to see if it is on the lists of hazardous wastes (federal or state). If it is not, you need to find out if it exhibits one or more of the hazardous characteristics. Check the material safety data sheet, or contact your supplier for information. The manufacturer of your raw material may be able to tell you whether the used material is hazardous waste. If you can't find the information another way, you will need to test your waste.

If you are unsure if your waste is hazardous, you will need to have it tested in a laboratory. The test used is called the toxicity characteristic leaching procedure. Many laboratories can do this test. Check your phone directory or ask your trade association for suggestions. Contact the Department of Natural Resources at 800-361-4827 for help with this.

Managing Hazardous Wastes

There are very specific requirements for managing hazardous waste from your business. The requirements you must meet depend on what and how much waste you generate. You need to know how much acutely hazardous waste (P-listed) and non-acute hazardous waste you generate each month. You also need to know how much of each of these types of waste you accumulate at any one time.

Use the following information to determine your generator status. See the *Hazardous Waste Management* fact sheet for more information on how to label, store and dispose of your hazardous waste.

What Type of Generator Are You?

There are three types of generators: large quantity generator, or LQG, small quantity generator or SQG, and conditionally exempt small quantity generator, or CESQG. Here are some general guidelines to help you decide what type of generator you are:

If you generate in one month or accumulate at any one time . . .

- More than 1 kg (2.2 pounds) of acutely hazardous waste you are an LQG.
- 1,000 kg (2,200 pounds) or more of non-acute hazardous waste you are an LQG.
- More than 100 kg (about 220 pounds), but less than 1,000 kg (2,200 pounds) of non-acute hazardous waste AND less than 1 kg of acutely hazardous waste you are an SQG.

- No more than 100 kg (220 pounds) of non-acute hazardous waste and less than 1 kg of acutely hazardous waste you are a CESQG.
- In Missouri, anyone generating one gram or more of dioxin waste (2,3,7,8-tetrachlorodibenzo-p-dioxin) is an LQG.

If you are a SQG or LQG you must register with the department and get a generator identification number. You also must follow regulations on storage, transport, record-keeping and reporting. Call the department for more information.

Note: The federal requirements for hazardous waste are available in the *Code of Federal Regulations*, Title 40, Part 260 through Part 280 (40 CFR 260-280). The Missouri Hazardous Waste Law is in the R*evised Statutes of Missouri* (RSMo), Sections 260.350-260.552. The hazardous waste rules are in the *Code of State Regulations*, Title 10, Division 25 (10 CSR 25). To get information on the regulations, call the Missouri Department of Natural Resources at 800-361-4827 or the federal government's Superfund/RCRA Hotline at 800-424 9346.

Remember

- You are responsible for determining if your waste is hazardous.
- You will need to register as a generator if you are a SQG or a LQG.

For More Information

Missouri Department of Natural Resources
Division of Environmental Quality
P.O. Box 176
Jefferson City, MO 65102-0176
800-361-4827 or 573-751-6892
www.dnr.mo.gov/env/index.html

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Lead-Acid Batteries

Lead-acid batteries from motor vehicles and equipment contain materials that pose a risk to people and the environment. These batteries contain sulfuric acid, lead and other materials that can be hazardous.

Used batteries are banned from sanitary landfills in Missouri. Do not put them in your trash or dumpster. Non-leaking batteries need to be handled in one of three ways.

1. Recycling Program for Lead-Acid Batteries

The current recycling program for batteries is extremely successful and the requirements are less stringent, so the waste batteries will probably be handled under this program. This program requires battery wholesalers and retailers to accept used batteries from their customers in quantities at least equal to the number of new batteries sold.

2. Universal Waste

Used batteries can be handled as universal waste. This option has more stringent requirements than the recycling option listed above. You must send the batteries to a recycling facility, a resource recovery facility or a permitted lead smelter. See *The Universal Waste Rule in Missouri* fact sheet (PUB2058) for more information. The fact sheet is available online at www.dnr.mo.gov/pubs/pub2058.pdf. If you do not have access to the Web, please contact the department to request the document.

3. Hazardous Waste

Used batteries can be handled as hazardous waste. Cracked or leaking batteries must be handled as hazardous waste. This option is normally the most costly and has the most stringent requirements.

Storage of used batteries

If you store batteries, it must be in a way that protects human health and the environment. The safe storage of batteries begins with a suitable location. Batteries should be stored indoors or under cover to keep them dry and to prevent damage to the casings caused by freezing and thawing. The storage location should not be where the batteries can be hit or run over. Batteries should not be stored near combustibles, such as gasoline, and the storage area needs to be well ventilated. Precautions should be taken to contain spills. One way is to store batteries on or above a sealed concrete floor with a curb. Storage of batteries outdoors may require a storm water permit from the department.

If you are storing batteries, you should have written procedures for handling spills or leaking or cracked batteries. Spills should be neutralized with a material such as agricultural lime, baking soda or a commercial spill kit, and be cleaned up immediately. Cracked or leaking batteries should be placed in a container impervious to acid, such as a five-gallon plastic bucket. Anyone handling the batteries or spilled material should wear protective clothing, gloves and eyewear. An eye wash sink or eye flush kit should be available. (Cracked or leaking batteries need to be handled as hazardous waste.)

Transporting Used Batteries

All used batteries need to meet Department of Transportation, (both state and federal) requirements for transporting hazardous materials. Hazardous waste batteries must be transported using hazardous waste haulers.

Remember

- Do not put batteries in the trash. They cannot go to a landfill.
- Handle and store lead-acid batteries properly.
- Cracked or leaking batteries are hazardous waste.

Pollution Prevention Options

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

- Store batteries where they will not be damaged or frozen.
- Store batteries so that leaks will be caught and contained.
- Anchor batteries when transporting.
- Use long-life batteries.
- Inspect stored batteries regularly for cracks or leaks before they become a problem.

For More Information

Missouri Department of Natural Resources
Division of Environmental Quality
P.O. Box 176
Jefferson City, MO 65102-0176
800-361-4827 or 573-751-6892
www.dnr.mo.gov/env/index.html

Mineral Exploration Test Holes

In the course of operating a quarry, or while exploring sites for new quarries, drilling of test holes is necessary to determine the size of the deposit. These test holes are considered wells and are regulated by the Missouri Department of Natural Resources' Division of Environmental Quality. Wells can provide a path for pollutants to get into the groundwater, so it is important that they be properly sited, drilled and plugged.

All wells drilled to a depth of 10 feet or more in Missouri must be drilled by a person who has a permit from the department. You should require that anyone drilling wells for you furnish proof of a current driller's permit. Permitted drillers should be familiar with the regulations, but you are responsible for making sure the regulations are followed at your facility. This document provides very general information to help you do this. If you need specific information on any of these topics, contact the Wellhead Protection Section at 573-368-2165 or call 800-361-4827.

Test Hole Locations

There are some general requirements for locating test holes. They must be located where there is good surface drainage and, if possible, at higher elevation than potential sources of pollution. The location must allow the well and surrounding area to be kept in a sanitary condition. There must be proper drainage so no ponding or accumulation takes place within 10 feet of the well. If possible, holes should be located in areas that do not flood.

In addition to these general requirements, there are specific setback requirements from certain potential sources of contamination. Chemical storage areas, landfills, lagoons, septic tanks and even roads could pose a risk to groundwater if test holes are located too close to them. The distance of the setback depends on the potential contaminant source and whether the well is cased.

Construction Standards

If permanent surface casing is set in the test hole, it must be set at least 50 feet into bedrock. Temporary surface casing lengths may be determined by the permitted well driller. When a hole is grouted, it must be with material and procedures approved by the department as explained in the regulations.

Plugging Test Holes

Each test hole must be plugged within 60 days of completion unless it is converted to another use. The exception is where a test hole will be destroyed within a year by the advance of quarry operations. Then a temporary surface plug to prevent surface water from entering the hole may be used. If a test hole is drilled to a depth greater than the quarry floor it must be plugged from total depth to the quarry floor depth with grout, in addition to the temporary surface plug. If the test hole is not destroyed by quarrying within one year it must be plugged.

A landowner may request to convert a test hole to another type of well such as for a water supply or a heat pump. The request must be in writing to the department and provide information to show that the well meets all construction requirements for the type of well requested.

Test Hole Registration

A test hole registration form must be submitted to the department within 60 days of the completion of test hole plugging. Your permitted driller files this report, but you should be sure it is done. This report contains information on tops and thickness of formations, the type of rocks encountered in drilling and information on the construction of the test hole. Currently there is no fee required, however the department can, and may in the future, charge a registration fee of up to $15 for each hole registered. If the test hole was for quarry expansion and will be destroyed within one year by operations, the hole does not have to be reported.

By law, exploration test hole information is confidential for 10 years. An additional five years of confidentiality may be granted upon written request by the operator.

Remember

- Anyone drilling test holes must have a permit from the department to do so.
- There are regulations that specify where and how a test hole can be placed.
- The driller must submit a registration form to the department within 60 days of plugging the hole.
- Test holes must be properly plugged within 60 days of completion.

Pollution Prevention Options

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

- Properly siting and constructing test holes will help prevent contamination of the groundwater.
- Do not use or store potential pollutants such as oil, gasoline, solvents, etc. near test holes.
- Always properly plug all test holes or other wells to prevent groundwater pollution.

For More Information

Missouri Department of Natural Resources
Wellhead Protection Section
P.O. Box 176
Jefferson City, MO 65102-0176
800-361-4827 or 573-368-2165
www.dnr.mo.gov/env/wpp/wellhd/index.html

Petroleum Storage Tanks

Some rock quarries have storage tanks containing oil or fuel. These tanks have the potential for leaking and spilling oil or fuel, causing harm to the environment. Storage tanks, depending on size, usage or type, are regulated by several agencies.

Aboveground Storage Tanks or ASTs

Federal law requires a spill prevention control and countermeasure, or SPCC, plan if an oil, used oil or petroleum storage tank is located where it could contaminate water due to a spill, for example on or near a stream, lake or river. An SPCC plan is needed if there is:

- Total aboveground storage capacity (of containers 55 gallons or greater) over 1,320 gallons, or
- Total underground storage capacity over 42,000 gallons that is not regulated by UST standards.

The basic requirements of an SPCC plan include what is being done to prevent spills, how any spills will be contained and how spilled oil or fuel will be removed and disposed of. Also, the storage tanks must have some form of secondary containment.

Aboveground petroleum storage tanks at a service station or a bulk terminal are regulated by the Missouri Department of Agriculture. Businesses that include these operations can contact the Department of Agriculture at

Missouri Department of Agriculture
Division of Weights and Measures
P.O. Box 630
Jefferson City, MO 65102
573-751-4278

Underground Storage Tanks or USTs

Those with underground storage tanks, or USTs, larger than 110 gallons must register those tanks with the Missouri Department of Natural Resources whether or not the tanks are in use, unless they were taken out of service before Jan. 1, 1974. There are also requirements in Missouri for the way new tanks are to be constructed and installed. Existing tanks were required to meet upgrade requirements or be properly closed by Dec. 22, 1998. Those planning to install a new UST must notify the department at least 30 days before beginning installation. All USTs must have approved methods of release detection for both the tank and piping, along with corrosion protection and spill and overfill protection. Tanks used to store heating oil for heating purposes only and residential and farm tanks less than 1,100 gallons are exempt from these regulations.

The department must be notified by calling 573-634-2436 as soon as possible within 24 hours of a suspected release from a UST or for spills greater than 25 gallons. Spills and overfills must be immediately contained and cleaned up.

Those planning to take a UST out of service temporarily or permanently, or wanting to use it for something besides petroleum products, should contact the department for information on what needs to be done.

Owners and operators of petroleum USTs must demonstrate financial responsibility for a possible release of products from the tanks. Several options are available for demonstrating financial responsibility. Missouri has a Petroleum Storage Tank Insurance Fund, or PSTIF, which provides for cleanup of contamination from both AST and UST releases. Contact PSTIF at 800-765-2765.

Remember

- An underground storage tank larger than 110 gallons must be registered with the department even if it is not being used.
- Those who store large quantities of petroleum products (i.e., oil, gasoline) or waste oil need a spill prevention control and countermeasure SPCC plan.
- Spills or releases must be reported to the department as soon as possible within 24 hours.

Pollution Prevention Options

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

- Prevent overfilling and spilling.
- Label tank contents to prevent mixing.
- Properly maintain tanks to prevent corrosion.
- Place aboveground tanks where leaks can be easily contained without entering the environment.
- Inspect tanks daily for leaks and spills.
- Maintain appropriate spill containment equipment and train employees on proper use.
- Clean up spills as soon as possible.
- Close out unused or out-of-service USTs in accordance with department regulations.

For More Information

Missouri Department of Natural Resources
Division of Environmental Quality
P.O. Box 176
Jefferson City, MO 65102-0176
800-361-4827 or 573-751-6892
www.dnr.mo.gov/env/index.html

Reclamation

It is important for operators of rock quarries to begin reclaiming land as soon as an area has been mined. Prompt implementation of land reclamation activities such as regrading, replacement of topsoil and revegetation will help prevent erosion and sediment pollution.

Reclamation Permit

Rock quarry operators that began mining in Missouri on or after Jan. 1, 1972, are required to apply for and obtain a permit from the Land Reclamation Commission. A packet containing application forms, instructions and supplemental information is available from the Land Reclamation Program or on-line at the Department of Natural Resources Web site. Forms may also be obtained by calling the department's publication distribution unit at 800-361-4827. The toll-free number may also be used to contact the Land Reclamation Program and first-time applicants should talk to the program while preparing their business plan. If assistance is needed with any application form for a mining permit, the program may be contacted directly at 573-751-4041.

To make sure funds will be available for reclamation, the operator is required to post a bond, payable to the state of Missouri, as part of the permit application. The bond remains in effect until the Land Reclamation Program approves the completed reclamation. Upon request of the operator, the reclaimed areas will be inspected by a representative of the Land Reclamation Program. The staff director of the Land Reclamation Program will approve or disapprove the reclamation based on the results of the field inspection.

The operator is required to submit a mine operation and reclamation plan (mine plan) as part of the permit application. The mine plan describes the conditions of the areas to be mined, the methods of mining and the plans for reclamation. This mine plan should incorporate pollution prevention measures.

Your mine plan contains very important information about how you will operate your quarry. Be sure that you prepare and read the plan very carefully and review it regularly. Also, make sure all employees with direct control over the operation of the mine know what is stated in the plan and have a copy available to review at any time.

Remember

- If you began mining at your site on or after Jan. 1, 1972, you must have a land reclamation permit.

Pollution Prevention Options

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

- Walk the mine area frequently to identify areas needing repair from erosion. Correct areas with conditions that lead to erosion such as weak vegetation reestablishment, ground settling, poor drainage, failing structures and ground damage from equipment traffic. This is particularly important along the edges of your quarry and where slopes are present. If you see any areas where mud is leaving the mine site after it rains, you must take steps to prevent this. Silt fencing, rock check dams, sediment ponds, and mulching are all options that can prevent sediment from leaving your mine site. Failure to correct these problems is a violation of the mining law and may result in enforcement with associated fines.
- Ensure availability of a mine employee to meet regularly with the state inspector to share ideas on improving the operation and reclamation at the mine.
- Keep good records on reclamation work schedules and deadlines to ensure that adequate resources are available to complete the work on time. Plan for uncontrollable events such as equipment failure and inclement weather when developing work schedules.
- If you need assistance or have any questions relating to your mine site and the permitting or reclamation process, please feel free to contact the Land Reclamation Program directly at 573-751-4041.

For More Information

Missouri Department of Natural Resources
Division of Environmental Quality
P.O. Box 176
Jefferson City, MO 65102-0176
800-361-4827 or 573-751-6892
www.dnr.mo.gov/env/index.html

Spills

Spills can hurt you and your employees. They can also cause environmental damage at your facility. Many spills are caused through improper storage and management of fluids. Spilled materials can pollute soils, groundwater, surface waters and wetlands, affect air quality and harm people and wildlife.

Prevent spills

1. Store all materials in closed and labeled containers to prevent spills, evaporation and mismanagement from lack of identification.
2. Check container content level before filling
3. Check container for leakage. Use only containers in good condition.
4. Use containers that are compatible with the contents.
5. Store containers so that they are not in contact with accumulated liquids.
6. Use storm drain covers to keep spilled material from entering storm water drains.
7. Train staff in safe drum and material handling equipment use.
8. Do not stack drums or other waste-fluid containers.
9. The U.S. Environmental Protection Agency, or EPA, has additional requirements for petroleum products that is in aboveground storage greater than 1,320 gallons or completely buried storage, not defined as an underground storage tank, with a capacity greater than 42,000 gallons.

Before a spill occurs

You should know what to do before it happens. We suggest you do the following before a spill occurs:

1. Have a procedure for handling spills:

- Train your employees how to quickly and properly respond to different kinds of spills using the proper emergency equipment and absorbent.

2. Have spill equipment on hand. Make sure it has been tested and maintained.

- Personal protection equipment such as gloves.
- Absorbent material for soaking up oils and solvents: Industrial spill clean-up products such as pads, booms and absorbents such as oil dry, absorbent blankets, kitty litter, etc.
- Containers to hold spilled waste: drip-pans, pails and drums.
- Shovels and scoops to clean-up absorbents for disposal into drums.

3. Practice emergency scenarios.

In case of a spill

1. Clean up spills right away.
2. Place absorbent materials on spill. Containerize used absorbent materials and dispose of properly.
3. Use fire extinguisher as required.
4. Materials such as sand, dirt and booms can be used to divert and contain spills on your property.
5. Place recaptured and containerized liquids in some type of secondary containment such as drums, livestock water troughs, or children's pools. Until the liquids can be better containerized, cover to avoid further loss by the wind or rainwater.
6. Do not use water to dilute spills or wash spills into storm or sanitary sewers or septic systems. Spills of any kind need to be kept out of the waters of the state. These waters include ditches, wetlands, creeks (including "dry" creeks), groundwater and surface water.
7. Spills of hazardous waste need to be handled as hazardous waste. Gasoline and diesel fuel may be considered hazardous waste. The cleanup of used oil spills is tied to the amount that needs to be cleaned up.

Report it

Any petroleum product releases greater than 50 gallons (or 25 gallons for underground storage tank spills) must be reported to the Missouri Department of Natural Resources, 573-634-2436, and the National Response Center, 1-800-424-8802, at the earliest practical moment after discovery. If the amount spilled is unknown you need to assume more than the reportable quantity was spilled and the spill needs to be reported.

Remember

- Use good work practices to prevent spills.
- Prepare for spills.
- Cleanup spills.
- Report spills as needed.

Pollution Prevention Options

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people.

- Use good work practices to prevent spills.
- Determine the best way to handle a spill, minimizing the amount of waste generated.
- Identify where floor drains discharge.
- Plug floor drains connected to the storm or sanitary sewer if they are located in an area subject to spills of hazardous chemical. If necessary install a sump that is pumped regularly.

Storm Water and Wastewater Permits

Rainwater that falls in and around a rock quarry can become contaminated with sediments, oil, grease and other materials. Runoff from product piles may be caustic. Process wastewater can contain contaminates. If not properly managed, this contaminated water can harm the environment, pollute creeks and lakes, and even contaminate drinking water.

The federal Clean Water Act requires rock quarries to have a discharge permit for storm water, process wastewater and domestic wastewater discharges.

Storm Water / Process Wastewater

General permit MO-G49 is available for rock quarry storm water and process wastewater discharges. Process wastewater includes quarry pit or mine dewatering, and vehicle and equipment washwater (without added detergents, acids, caustics, solvents or other additives). It *does* authorize the use of soap or detergents in vehicle washing, but *only* if less than 500 gallons per day is used, and the water is not discharged (i.e. allowed to soak into the ground). Equipment washwater without these additives can be discharged the same as other process wastewater. Further explanation is provided in the general permit.

This general permit has discharge monitoring and reporting requirements. Sand and gravel washing, clay pits and clay mining are not covered under this permit. These operations require different permits. To apply for the general permit MO-G49, complete an application Form E and submit it along with a location map and required fee to your department regional office.

Facility owners may obtain a site-specific permit instead of a general permit, if they so desire. A site-specific permit takes into account the individual characteristics of the site, storm water runoff, process wastewater and domestic wastewater discharges. This means that while multiple general permits might be required for several different activities, one site-specific permit can be obtained that authorizes them all. It can be less conservative in effluent limits or narrative conditions if the conditions of the receiving stream allow, but the annual fees are considerably higher. The department *may require* your quarry to obtain a site-specific discharge permit if it determines that it is needed to better protect water quality.

Domestic Wastewater

Domestic wastewater is wastewater from restrooms and kitchen facilities. Domestic wastewater can be discharged to public sewers, to a quarry-owned wastewater treatment system permitted by the department or to an on-site wastewater system that discharges to a soil absorption system (e.g. septic tank and drainfield). The Department of Health and Senior Services, or DHSS, regulates on-site wastewater systems. Process wastewater cannot be discharged to an on-site wastewater systems. Do not send process wastewater to a septic system, doing so could contaminate the groundwater.

Construction Projects

The MO-G49 general permit authorizes construction of a new rock quarry or initiating new quarry-related activity. No land disturbance permit is required.

If you do not already have the MO-G49 permit for a facility, and you wish to conduct grading, excavating or the removal of vegetation in an area one acre or larger, you will need a storm water land disturbance permit. Land disturbance permits require the use of “best management practices”, or BMPs, to minimize soil erosion from the site. Land disturbance BMPs include maintaining existing vegetation, temporary revegetation, silt fences, straw bales and sediment basins.

Remember

- Obtain required permits for storm water and process wastewater discharges.
- Obtain required land disturbance permits for construction projects.
- Discharge domestic wastewater to public sewers, to a department permitted treatment system or to an approved DHSS on-site system.

Pollution Prevention Options

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Your permit may require certain pollution prevention practices or even a pollution prevention plan. Here are some suggestions:

- Prevent spills of oil, grease and gasoline in vehicle and equipment maintenance activities.
- Maintain appropriate spill containment equipment and train employees how to use it.
- Design, construct and maintain detention basins to capture sediment.
- Use interceptor dikes, swales or berms to direct storm water away from areas that are prone to erosion or to convey runoff to the detention basin.
- Inspect and maintain the erosion prevention and sediment control structures to ensure their effectiveness.
- Re-vegetate disturbed areas as soon as possible.
- Use mulches, geotextiles and other measures to prevent erosion.

For More Information

Missouri Department of Natural Resources
Water Protection Program
P.O. Box 176
Jefferson City, MO 65102-0176
800-361-4827 or 573-751-1300
www.dnr.mo.gov/env/wpp.htm

Used Oil Disposal and Recycling

Improper disposal of used oil can cause damage to the environment and result in costly clean up. In Missouri, there are certain things you must do and certain things you cannot do when managing used oil from your business.

You cannot dispose of used oil at a landfill or with your regular trash. You cannot dispose of your used oil into the environment or create a public nuisance. You cannot use used oil for dust suppression or killing weeds on gravel roads, parking lots or elsewhere.

Used oil is regulated under the federal and state hazardous waste laws and regulations. If you recycle your used oil, it is regulated under special used oil regulations. Recycled used oil includes oil that is re-refined, reclaimed, reprocessed or burned for energy recovery. If you do not recycle your used oil, it is regulated as a hazardous waste. The waste code for used oil in Missouri is D098. See the guide sheet on *Hazardous Waste* for more information.

Off-Site Shipments of Used Oil

Used oil must only be hauled by transporters who have EPA identification numbers and Missouri hazardous waste transporter licenses. Contact the department for a list of transporters with Missouri hazardous waste transporter licenses.

You can transport your own used oil if

- you transport 55 gallons or less at any time,
- it is your own used oil or used oil accepted from do-it-yourselfers or exempt farmers,
- you take the oil to a used oil collection center or used oil aggregation point, and
- you use your own vehicle or an employee's vehicle.

Mixing other wastes with used oil

Be very careful what you mix with used oil. You can mix certain ignitable hazardous wastes with used oil if the mixture you end up with is not ignitable. If you are a small or large quantity generator of hazardous waste and the hazardous waste is something other than ignitable (for example if it's a listed hazardous waste.), mixing it with your used oil will make your used oil a hazardous waste. For example, mixing your listed hazardous waste spent solvent with used oil will cause all of the oil mixture to be hazardous waste. See the guide sheet on *Hazardous Waste in Missouri* (PUB919) for more information.

On-Site Space Heater

In your shop you may burn your own used oil, oil from do-it-yourselfers and oil from farmers who generate fewer than 25 gallons per month in specially-designed used oil space heaters. The used oil space heater must have a capacity of 500,000 BTU per hour or less and be vented outside. You do not need to notify the department if you are burning used oil, but you must notify the department if you are collecting used oil from do-it-yourselfers or farmers.

If you are a small quantity or large quantity hazardous waste generator, you cannot burn any mixture of used oil with hazardous waste in a used oil space heater. If you are a conditionally exempt hazardous waste generator of ignitable hazardous waste, you may mix it with your used oil for burning. However, this can damage the space heater and release hazardous emissions into the environment. Before adding anything to your used oil, check with your used oil transporter or used oil space heater manufacturer to make sure that practice is acceptable.

Remember

- You cannot send used oil to the landfill or pour it out onto the ground.
- If you are not recycling your used oil, it is a hazardous waste.
- If someone else is hauling your used oil, they must have an EPA identification number and be registered with the department.
- You may burn your own used oil in a used-oil burner smaller than 500,000 BTU/hour that is properly vented.
- You may collect and burn used oil from do-it-yourselfers, or DIYs, or exempt farmers, but you must first notify the department that you are a DIY used oil collection center.

Pollution Prevention Options

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

- Keep used oil separate from other wastes.
- If you remove oil-laden parts, place them on a drip pan rather than the floor.
- Do not use the oil drip pan to collect antifreeze or solvent.

For More Information

Missouri Department of Natural Resources
Division of Environmental Quality
P.O. Box 176
Jefferson City, MO 65102-0176
800-361-4827 or 573-751-6892
www.dnr.mo.gov/env/index.html

Used Oil Storage

Improper storage of used oil can increase the risk of spills and leaks that could harm the environment and prove costly to clean up. In Missouri, there are some legal requirements for storing used oil from your business.

If you store used oil, you must

- label the storage container(s) with the words “Used Oil,”
- keep containers in good condition,
- not store used oil collected from do-it-yourselfers longer than 12 months,
- keep containers closed if they are exposed to rain or snow (except when removing or adding used oil),
- inspect storage areas regularly for leaks or spills (clean up as required), and
- if a container is leaking, fix it immediately or move the oil to another container.

To help prevent spills, you may wish to put your used oil containers in a “secondary containment” structure. Secondary containment is the name used to describe a structure or container that holds the storage tank and can hold the liquid if the storage tank leaks. The secondary containment should have a volume at least as large as the largest container OR 10 percent of the total volume of all the containers, whichever is greater.

If you are storing a large amount of petroleum products and used oil (over 1,320 gallons in above ground tanks), you are required to have spill prevention measures. See the *Petroleum Storage Tanks* guide sheet in this publication for more information.

Your community or county may have specific requirements for storing oil. Check with local authorities, particularly your fire department.

The department recommends not storing used oil in underground tanks.

Storing containers on an impervious surface (like sealed or treated concrete) helps contain spills and makes clean up easier. Some shops store their used oil containers on pallets or slightly elevated in some way to make it easier to spot spills or leaks.

Clean up any spills immediately. Spills of more than 25 gallons of used oil or other petroleum products from underground storage tanks must be reported to the department. Petroleum spills from any other source must be reported if the spill is more than 50 gallons. If the petroleum spills into a waterway such as a creek, lake, river or stream, or into a ditch that drains to a waterway, it must be reported to the department no matter how small the spill.

The legal requirements for used oil storage can be found in 10 CSR 25, Chapter 11 of the Missouri Code of State Regulation and in the federal regulations, 40 CFR Part 279.

Remember

- Label storage containers and keep them in good condition.
- Inspect storage areas regularly. Fix leaks immediately or move the oil to another container.
- If containers are exposed to rain, keep them closed except when adding or removing used oil.
- Check with local authorities to learn if there are local requirements.
- Report oil spills, as required, to the department.

Pollution Prevention Options

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

- Keep used oil separate from other wastes.
- Have separate storage containers for antifreeze, solvents or other fluids that could accidentally be mixed with used oil.
- Use large drum funnels or fill tubes when filling used oil drums. Store funnels on a drip pan to collect dripping oil.
- Clean spills with a rag or mop that can be wrung-out and reused. A biodegradable soap and water solution may be used to clean up oil sheens.

For More Information

Missouri Department of Natural Resources
Division of Environmental Quality
P.O. Box 176
Jefferson City, MO 65102-0176
800-361-4827 or 573-751-6892
www.dnr.mo.gov/env/index.html

Scrap Tires

Tires that are too damaged or worn for use as vehicle tires are scrap tires. Since 1990, the storage, hauling and disposal of scrap tires have been regulated under Missouri's Solid Waste Management Law.

Storage

Scrap tires must be stored in a way that does not cause pollution, health or nuisance problems. Since tires can collect water and create breeding grounds for mosquitoes, you should protect your storage area from rainwater or provide some other way to control mosquitoes. Tires may also pose a fire hazard, so they should always be stored away from ignition sources.

Store any tires intended for resale or retreading separately from scrap tires. Tires intended for resale or retreading are not regulated as scrap tires.

Anyone storing 25 to 499 tires is regulated as a scrap tire collection center and must meet certain requirements. Anyone who stores 500 or more tires must have a permit from the Missouri Department of Natural Resources as a scrap tire processing facility. Contact the department's Solid Waste Management Program at 1-800-361-4827 for more information on these two activities.

Hauling

If you pay someone to haul away your scrap tires, that person needs a permit from the Missouri Department of Transportation's Motor Carrier Service. Visit www.modot.gov/mcs. However, you or other employees from your business do not need a permit to haul tires generated from your business. Whole tires may be hauled to a scrap tire processor, a scrap tire collection center or a scrap tire end user. Tires may be hauled to a landfill if they are cut, chipped or shredded.

A tire hauler's permit is good for one year and only applies to the business or person to whom it is issued. Check the expiration date and name on the permit to be sure it is valid. To get the list of permitted scrap tire haulers or check the permit status of a hauler who picks up tires at your quarry, contact the department's Solid Waste Management Program or visit www.dnr.mo.gov/env/swmp/tires/tirehaul.htm.

Recordkeeping

You should keep a record of how many tires are removed from your facility each month. Include the name of the hauler and the date the tires were removed. Record keeping forms are available from the department's Solid Waste Management Program.

Beneficial use

Sometimes a person wants a few scrap tires for a home project. Individuals can haul their own scrap tires for their own use. If someone wants to use over 100 tires, they need to get the departments approval. Using tires for erosion control is not a good idea. In Missouri, you are not allowed to place tires in waters of the state. This includes streams, rivers, gullies and wet-weather creeks (among other areas).

Processing
Anyone who processes scrap tires for a fee must have a processing permit from the department's Solid Waste Management Program if more than 25 tires are on-site at any time. You do not need a permit to process tires generated from your own business. Processing includes shredding, cutting, chipping or otherwise altering the tires.

Disposal
Never burn tires in Missouri. Even in areas where home waste burning is allowed, burning tires is prohibited. You cannot dispose of tires in a landfill unless the tire is cut up in three or more pieces or in half circumferentially (forming two circles). There are places to legally take your scrap tires in Missouri. They usually charge a fee per tire and can accept whole tires. Contact the department's Solid Waste Management Program for a list of sites or visit www.dnr.mo.gov/env/swmp/tires/tireprocessors.htm. The department presently allows scrap tires from large earth-moving equipment to be used on-site in limestone quarries provided it does not cause pollution, a health hazard or a public nuisance. However, this practice is not encouraged. You should try to find alternative ways to manage these tires. There are facilities in Missouri that can process these tires. Contact the department's Solid Waste Management Program for a list or visit www.dnr.mo.gov/env/swmp/tires/tireprocessors.htm.

Uses for scrap tires
There are options for using scrap tires rather than disposing of them. Scrap tire chips can be used for many things such as mulch on playgrounds or as fuel in electric power plants or cement kilns. Contact the department's Solid Waste Management Program for information on reuse and recycling options.

The legal requirements for scrap tires can be found in 260.270-279, Revised Statutes of Missouri (RSMo) and in 10 CSR 80, Chapter 8 of the Code of State Regulations.

Remember
- Do not burn scrap tires.
- Scrap tires cannot go to the landfill unless they are cut into three or more pieces or in half circumferentially (in two circles).
- If you wish to store 25 or more scrap tires, you must follow requirements for scrap tire collection centers. If you store more than 499 scrap tires, you must follow the requirements for scrap tire processing facilities. Contact the department's Solid Waste Management Program for more information.
- If you pay someone (other than an employee) to haul away your scrap tires, that person needs a scrap tire hauler permit from the Missouri Department of Transportation's Motor Carrier Services.

For More Information
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Division of Environmental Quality
P.O. Box 176
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www.dnr.mo.gov/env/swmp/tires/tirelist.htm