Environmental Risk Overview

Quarries

A quarry is a type of open-pit mine from which many types of rocks and stones are excavated. Rocks and stones excavated from quarries include, but are not limited to: ores, quartz, sandstone, chalk, marble, limestone, coal, slate, granite, gypsum, and construction aggregate, including sand and gravel. There are several methods of quarrying and each carry the potential to adversely impact the environment. Digging is used when the quarry consists of small and soft pieces of stones. Heating is used when the natural rock bed is horizontal and small in thickness. Wedging is used when the hard rock consists of natural fissures. When natural fissures are not present in the structure of the rock, artificial fissures are created by drilling holes for blasting the rock with controlled explosives. Following the blasting process, stones are moved by excavation of the blast area. Heavy equipment is used in quarries which presents the potential for contamination of the environment through fuel loss, leakage, and emissions to the atmosphere. Above ground storage tanks (ASTs) and/or underground storage tanks (USTs) may be located at quarries which have the potential to lead to numerous environmental contamination issues.

Environmental Exposures May Include

- Quarries may use ASTs or USTs to fuel equipment onsite. Leaks from storage tank systems and releases during delivery or from fueling operations can contaminate soils and groundwater, and may enter storm drains damaging the local sanitary sewer or municipal and private drinking water systems in surrounding areas.

- Improper handling and storage of chemicals may lead to environmental liability and/or legal consequences for violating regulatory requirements. Containment breaches, leaks or spills during loading and unloading can result in a release of chemicals, which may migrate to the soil, groundwater, or adjacent properties. Combinations of incompatible chemicals are prone to react violently or produce toxic byproducts/gases when stored together or mixed.

- Explosives are used in the mining process at quarries to extract rock and other materials which may cause damage to neighboring properties and subject the owner of the quarry to third-party property damage claims. Use of explosives also causes fissures that may allow contaminants to enter the groundwater in the area and adversely affect drinking water supplies.

- Drilling fluids may contain various additives to help cool and lubricate drills, aide in the flotation of drill cuttings, seal porous layers of the drilling area and more. These compounds can be toxic, especially to aquatic systems and other natural resources. Drilling fluids could contaminate and/or cross-contaminate ground water and aquifer materials. A containment breach or spill could also occur during storage and transportation of additives, base fluids and premixed fluids. Releases can migrate, or be carried off site by storm water runoff, and impact adjacent properties, storm water drains and nearby surface waters. Disposal of spent drilling fluids could result in a migration of liquid waste from the disposal site.

- Stormwater run-on and runoff from a quarry may come in contact with outside storage of chemicals, debris, waste, or sludge and mobilize contaminants resulting in damage to soil and groundwater, and natural resources such as rivers, lakes, streams and wetlands causing hard to aquatic life.

- “Explosive residue” may be left in the form of unexploded material after completion of blasting operations. The explosive residue can contain hazardous materials, such as nitrate and fuel oil, which can enter groundwater and surface water, such as ponds and wetlands, through gravity flow and washing of the aggregate and can harm natural resources.

- Non-metallic mineral processing operations at the quarry generates dust emissions. These air emissions may violate federal clean air standards and could lead to regulatory actions against the quarry. Dust emissions from quarries may also impact the residents of local communities by causing respiratory damage, respiratory disease, aggravate lung conditions, cause asthma attacks and acute bronchitis, and may increase the susceptibility to respiratory infections. These illnesses could result in third-party bodily injury claims against the owners of the quarry and may ultimately lead to lawsuits.

- Heavy-duty trucks that are unloading/dumping materials at a quarry can leak automotive fluids on the property. Pollutants such as heavy metals, solvents, fuels, oil and grease can leach into the soil and contaminate groundwater or can be collected by rainfall, creating contaminated storm water that can pollute storm drains and adjacent sites.

- Quarries use vehicles and heavy equipment in their daily operations. These types of internal combustion vehicles are powered by the use of diesel or propane fuel, which when burned generate air emissions from the equipment exhaust emitting carbon monoxide gas. Breathing carbon monoxide can cause headache, dizziness, vomiting, and nausea. When carbon monoxide levels become high enough, it can cause a person to lose consciousness or, in severe cases, cause death. Exposure to moderate and high levels of carbon monoxide over long periods of time has also been linked with increased risk of heart disease.

- Quarries utilize facilities, such as stockpiles, storage ponds and moats that are lined with clay or geomembrane materials. Damage to the liner could provide a pathway for contaminants to be released into the subsurface and migrate into the underlying soil and groundwater, resulting in contamination at the site and potentially adjacent properties.

- Most earthwork activities require silt/sediment and erosion control. This is largely due to regrading, fill placement, excavation, drilling, stockpiling of material, and other activities that disturb the surface cover and exposes bare soils. Silt and sediment are fine grained soil particles that are readily carried in surface runoff. Improper erosion control or handling of sediment-laden water can lead to surface runoff that can impair the functionality of storm water drainage systems and catch basins, severely damage water quality and can threaten aquatic systems and drinking water sources.

J Loos & Associates
Insurance and Bonds

- Illicit abandonment of materials, such as hazardous and non-hazardous waste, solid waste, drums, tires, and old appliances, could occur at the quarry. Illicit abandonment is the illegal dumping of pollutants on a property. It can become the burden of the property owner for cleanup and third-party bodily injury or property damage if law enforcement cannot find the originator of the waste.
- Equipment washout and decontamination water can contain toxic materials and be caustic and corrosive. Improper washouts from cleaning mobile equipment, pumps, hoses and drill rods can leach into soil and groundwater or can run off site and into storm drains that discharge to surface waters and result in significant damage to natural resources and aquatic life.

Environmental Pollution Liability Can Provide Coverage For

- On-site cleanup of new and preexisting pollution conditions
- Off-site cleanup of new and preexisting pollution conditions
- Third-party claims for bodily injury, property damage and cleanup costs arising from on-site or off-site pollution conditions
- Defense of third-party claims
- Both sudden and gradual pollution conditions
- Emergency Response
- Non-owned disposal sites
- Business interruption resulting from pollution conditions
- First and third-party transportation pollution liability
- Loading and unloading
- Aboveground and underground storage tank
- Illicit abandonment of materials
- Civil fines and penalties
- Silt and sedimentation
- Natural resource damage

Claims Scenarios & Examples

- A local rock quarry agreed to settle air emissions claims by the Environmental Protection Agency (EPA) for violating federal clean air standards relating to non-metallic mineral processing. The company was fined $80,000 and was ordered to correct the violations, which included excessive dust emissions and improper record-keeping.

- A lawsuit was filed by 28 families against a quarry owner, alleging that the entire neighborhood experienced problems with their wells, including muddy, turbid water and, in some cases, no water at all, as a result of the quarry blasting. One of the plaintiffs were left with no water for days and a huge puddle of mud surrounding their well cover. Once they got water running from the well again, initial tests showed it had coliform bacteria and E coli, forcing them to use bottled water for drinking and cooking. The quarry company agreed to a settlement, paying $1 million to set up a fund to provide an alternative water source to the area.

- A lawsuit was filed against a stone quarry for violating its water pollution control permit. The quarry operator agreed to pay $35,000 in forfeitures, penalties and costs for violating state laws that regulate discharges of pollutants into state waters, and to take remedial action to restore the damaged portions of a nearby stream. According to the complaint, the quarry operator illegally discharged wastewater containing excessive amounts of pollutants into the stream, and the discharges deposited a substantial amount of material on the stream bottom, preventing the growth of aquatic vegetation and seriously degrading the stream as a habitat for fish.

- A lawsuit against two quarry operators alleged that violations at their facilities were damaging the health and properties of their neighbors. The civil suit alleged that deep drilling from the quarry is responsible for numerous sinkholes and an overwhelming loss of spring water in the surrounding area. As part of a settlement reached the quarry companies will pay the city $1.1 million and the current operator will, at its own expense, install an approximate 5,000 foot, 8-inch waterline to serve the community and repair all existing and future sinkholes and sinkhole-related damages to properties, easements and rights-of-way owned by the city. In addition, the current operator will indemnify the city from future claims and liability arising from sinkhole-related damages.

- A mining operation had a lawsuit filed against them claiming years of pollution and violations of the federal Clean Water Act. The lawsuit claimed that the quarry owners discharged dirt, silt and other pollutants into tributaries that lead to nearby rivers. According to the lawsuit, pollutants including nitrates, oil and grease were discharged into an intended infiltration pond, which frequently overflowed and carried those substances into the river system, harming fish habitat. Additionally, pollutants were also claimed to have been released and washed down along an adjacent haul road, leading to resident complaints of impacts to local wells, safety hazards and other concerns stemming from the operation. The lawsuit asked a judge to remediate past and future environmental harm in the area, and impose fines against the quarry operators. It also sought economic and noneconomic damages.

Final Consideration

Your property can be faced with the cost to defend itself against allegations or legal action from pollution related events, regardless if you are at fault or not. Having the proper insurance coverage in place will help fund the expenses incurred to investigate or defend against a claim or suit and provide you with environmental claims handling expertise.

This environmental risk overview has been developed by Environmental Risk Professionals on behalf of J. Loos & Associates. It is intended to provide the reader with a broad range of potential risks they may encounter and may not reflect all risks associated with their business. To verify available insurance coverage, please consult your insurance representative.

© 2020 Environmental Risk Professionals

J Loos & Associates
Insurance and Bonds

J. LOOS & ASSOCIATES
Daniel Loos
919-256-6860
daniel.loos@jloosins.com
www.jloosins.com