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Environmental Regulations for Aggregate Mining

Size and Scope of Aggregate Mining Operations Vary

There is a wide variability in the size and scope of aggregate mining operations in Nebraska. Some are active only for one season to serve road construction projects. Others are long-term sites that operate continuously over several years. The materials being mined and the mining methods also vary greatly. Some operations mine unconsolidated sand and gravel materials; others produce crushed rock blasted from bedrock. Some operations mine within the water table and others remain above the water table.

There are various types of auxiliary facilities used at an aggregate operation, such as crushers, wash plants and asphalt plants. Permits required for aggregate mining depend on the size, scope, and location of the operation.

Local Permits

Counties, townships, or municipalities have the primary authority for regulating extractive uses like aggregate mining. In some counties, aggregate mining may require a permit from the county planning and zoning office. A township or municipality may also require a permit in addition to (or instead of) a county permit. Local permits are generally required for new operations that exceed a certain threshold of activity or for expansion of an existing operation. The threshold for triggering a permit varies from one county to the next and may be related to area, production volumes, or length of time.

Local permits may address issues such as: hours of operation, noise, traffic, dust, and reclamation. Performance bonds or some other form of financial assurance may be required. The term of local permits can vary. Local authorities may require a mining and reclamation plan along with the permit. For more information on local permits required for aggregate mining, contact the local county zoning or planning office.

State and Federal Permits

In general, state agencies have no regulatory role in administering or reviewing local permits. Depending on the size and scope of the mining operation, however, some state and federal permits may apply to certain aggregate mining operations.

Storm Water and Other Water Discharges

To excavate gravel or rock, the water table may need to be lowered. Washing of sand, gravel, or crushed stone may be needed to ensure it meets product specifications. The following activities at aggregate operations require a permit from the Nebraska Department of Environment and Energy (NDEE) National Pollutant Discharge Elimination System (NPDES) Program:

- Construction activities, such as building roads, berms, containment devices, and grading at a new pit or quarry.
- Sand and gravel washing discharges that leave the mine or quarry pit, whether by gravity flow or pumping. Often, operators can recycle their wash water and/or allow it to infiltrate the pit floor, and avoid the need for wash water overflows and other discharges. This may change the requirement for a permit.
- Pumping or siphoning out a mine or quarry pit to create a dewatering discharge. Good sump management to prevent accumulation of dirty water is important, particularly in quarry pits. Sometimes pit water can be reused in the plant, or for road dust control.
- The generation of wastewater by air emission control systems, particularly from the wet scrubbers used at some hot mix asphalt plants.
- The discharge of any other water from the site.
- Storm water runoff from mine and quarry stockpiles and pit walls, as well as from equipment like rock crushers, hot mix asphalt, and concrete production plants. A site with runoff needs to have a Storm Water Pollution Prevention Plan (SWPPP) implemented for the Operations at that particular site. Good management practices such as vegetative buffers, detention ponds, covered bulk containers, and hazardous material storage areas, as well as the skillful placement of stockpile sand equipment can greatly improve storm water management and erosion control at aggregate sites.

To apply for a NPDES Industrial Storm Water permit for aggregate operations contact the NDEE NPDES Program, or visit our website at <http://dee.ne.gov>.

Fuel and Hazardous Materials Management

When equipment is refueled, maintained, or repaired outside the shops, special care must be taken to prevent spills and to quickly contain and collect accidental spills. The employees at each site should be trained under a spill control plan. Used oil, lubricants, antifreeze, paint, solvents, vehicle cleaning wastes, recovered freon, asbestos, PCBs, and shop wastes should be properly contained, stored, and recycled or disposed of in compliance with state and federal requirements.

For more information on Hazardous Waste requirements and publications available to help you comply contact the NDEE or visit our website at <http://dee.ne.gov>.

Liquid (including fuel) storage tanks, whether above ground or underground, need to have effective containment and may need to be approved by the state. For more information on tank requirements, contact the Nebraska State Fire Marshal (<https://sfm.nebraska.gov/>*).

Air Quality Management

All facilities must meet minimum standards for dust and noise control. Facilities with crushing operations may have to meet additional federal standards for emissions of particulates from processing equipment. It is important to control dust throughout the facility, including at crushers, screens, conveyors, and hoppers. Due to potential air quality problems, materials containing asbestos (which is generally found in old buildings, and has been used in older roads and concrete materials) must not be crushed.

The use of fuels, other volatile chemicals, and/or generators may also dictate additional air quality requirements. Depending on production capacity and processing equipment, an Air Permit may be required.

For more information on Air Quality requirements, contact the Air Program at the NDEE, or visit our website at <http://dee.ne.gov>.

Burning Permits

A burning permit may be required if the facility needs to burn brush from clearing and stripping operations. Burning permits are available through the State Fire Marshal's office. There may be additional requirements at the local level (county, township, municipality) regarding burning restrictions.

For more information, contact the Nebraska State Fire Marshal's office.

Solid Waste Management

Some aggregate operations store used asphalt and/or concrete, captured particulate emissions, or other demolition debris. The Nebraska Department of Environment and Energy (NDEE) encourages recycling of these materials, and of scrap and trash materials, when possible. If this is not practical, used pavement must be disposed of in an approved sanitary or demolition debris landfill.

For more information on Solid Waste requirements, contact the NDEE Solid Waste Management Program, or visit our website at <http://dee.ne.gov>.

Water Withdrawals

Surface or groundwater withdrawals (such as dewatering, washing, makeup water for scrubbers, roadbed preparation, dust control, irrigation, etc.) may require a Department of Natural Resources (DNR) water appropriation permit. Re-use of dewatering and wash water is encouraged and may help eliminate the need for a permit or reduce DNR water use fees. A DNR water appropriation permit may not be required if the water is taken from a municipal or other water source for which there is a valid appropriation permit.

Local Natural Resources Districts also may have requirements pertaining to groundwater withdrawals. For more information on water use, contact the Nebraska DNR and your local NRD.

US Army Corps of Engineers

Activities that involve the discharge of dredge or fill material or excavation within waters and wetlands may require approval of the Corps of Engineers. Such activities could include the construction of access roads or the creation of storage areas and building sites.

Also, activities related to the construction of pit dewatering outfall structures and the excavation of water detention/retention ponds within waters and wetlands may require Corps approval.

For more information on the Army Corps of Engineers requirements, contact the Omaha District Office at 888-835-5971.

Questions?

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