



Minnesota Department of Natural Resources Fact Sheet

Silica Sand Mining Trout Stream Setback Permit

MN Statutes, section 103G.217

Background

Groundwater discharge from natural springs and seeps in southeast Minnesota is vital to sustaining the region's trout streams and recreational, commercial, agricultural, environmental, aesthetic, and economic values. Recognizing this, the 2013 Legislature prohibited the excavation or mining of silica sand in this region within one mile of any designated trout stream unless a silica sand mining trout stream setback permit has been issued by the DNR commissioner. The Legislature thus provided DNR permitting authority for any silica sand mining activities that occur within one mile of a designated trout stream.

As a result, DNR is now developing the process to administer these permits. The permit application process will require a mine proposer to complete a hydrogeologic evaluation and collect any other information necessary to assess potential impacts to trout streams, springs, seeps, and fens and other hydrogeologic features. Based upon the evaluation, the DNR will identify appropriate setbacks from designated trout streams, springs, and other hydrogeologic features, such as water tables, and any other restrictions necessary to safeguard these resources.

DNR intends this permit process to complement other existing regulatory programs and not supplant or duplicate them. The permit process is limited to proposals to excavate or mine silica sand within one mile of any designated trout stream in the Paleozoic Plateau Ecological Section of Minnesota. This area includes the southeast tip of the state as shown in the adjacent map.



Application Process

Pre-application Meeting

The permit application process begins with a pre-application meeting and site-visit with the project proposer to review the proposed mining operation and provide direction on the preparation of the remaining application materials.

A two-tier approach will be used in evaluating proposed silica sand mining operations. Tier 1 includes dry mining operations where mining does not extend below the water table and groundwater extraction is limited to less than 10,000 gallons per day or one million gallons per year. Typically, dry mining operations are expected to have less environmental concerns than wet mining. Tier 2 includes wet mining operations where excavation occurs below the water table or where a significant volume of groundwater is extracted. Early in the process the DNR will determine if it will be a Tier 1 (less potential for adverse effects) or Tier 2 (higher

potential for adverse impacts; more rigorous information requirements) application. Tier 2 projects, if permitted, are likely to have more stringent restrictions.

The pre-application process will include a quick assessment of the potential issues that a project proposer may face, e.g., an area with numerous springs could be subject to substantial set-backs, buffers, etc. limiting the area that could be mined. Our goal is timely and open communication with the project proposer to facilitate compliance and well-informed decision making.

Pre-application spring monitoring

Springs and other significant water features in the area of concern are to be monitored for at least one year prior to application. The area of concern will often extend beyond the boundaries of the mine operation. When an Environmental Assessment Worksheet (20 acres and up) is required, the collection of data, such as spring monitoring, will also be required as part of the environmental review.

Application

Following the pre-application meeting and adequate monitoring, an application will be submitted to the DNR. Upon determination that the application is complete, the DNR will forward the application to the local zoning authority, soil and water conservation district, and watershed district for a 30-day review period.

Required Permit Application Submittals

The required technical documents for Tier 1 Dry Mining applications are:

1. *General Mine Location Map with Supporting Information* (This map indicates mine location and footprint, streams, wetlands, watershed and springshed boundaries, roads, developments, and other supporting information.)
2. *Mining Plan* (This includes mine depth, processing, timing, techniques, etc.)
3. *Mine Reclamation Plan* (The final disposition and topography of site, re-vegetation, and schedule are included in this plan.)
4. *Stream and Wetland Resources Report* (Field delineations, mapping and characterization of streams, springs, seeps, calcareous fens and other wetlands are included in this report.)
5. *Hydrogeologic Evaluation Report for Tier 1* (This is a comprehensive report which summarizes the plans and information gathered about the proposed mine, including all of the sections above (maps, mining plan, reclamation plan, spring and wetland resources report, and monitoring plan). This report is for dry mining operations only.)
6. *Groundwater and Stream Monitoring Plan* (This plan includes descriptions of the design, installation, management and operations of the planned monitoring network for the site. The monitoring network will be installed and operated prior to initiation of mining activities to establish baseline conditions.)

Additional technical requirement for Tier 2 Wet Mining application:

7. *Comprehensive Hydrogeologic Investigation Report for Tier 2* (This report includes the Tier 1 Hydrogeologic Evaluation Report information plus additional information needed to assess wet mining proposals. It will include data and information gathered from the more extensive groundwater monitoring and aquifer testing.)

Mining Limitations

Parameters that will be used to evaluate proposed silica sand mining operations and determine setback distances include:

1. Trout stream temperature. Does the proposed silica sand mining operation have the potential to increase trout stream temperatures?
2. Stream base flow or stream quantity. Does the proposed silica sand mining operation have the potential to cause a reduction in groundwater base flow recharge to trout streams or a reduction in trout stream flow volumes?
3. Spring water quality. Does the proposed silica sand mining operation have the potential to lessen the quality of spring water, including its temperature, turbidity, or contamination?
4. Surface Water runoff. Is there a threat of negative impacts to streams from increased surface water runoff from silica sand mining operations?
5. Processing, stockpiling. Is there a threat of negative impacts to streams from the processing or stock piling of sand or leachate from those processes?
6. Recreation: Does the proposed silica sand mining operation have the potential to lessen the recreational use or productivity of the trout streams due to the operation of the silica sand mine?

Mining and Reclamation Plans

An important part of silica sand mining in relation to trout stream protection is the reclamation of the mined land. Reclamation is a process that results in a safe and non-polluting mine area following the close of the mine and sometimes during mine operation. Reclamation controls potential adverse environmental impacts and safety issues, preserves natural resources, and encourages responsible planning for future land use; while encouraging good mining practices. While much of the reclamation takes place at the end of a mine's operation, reclamation planning occurs before a mine is permitted. Understanding how the land will look after mining helps guide how the mine is opened and developed. The mining and reclamation plans will be based on discussions between the applicant and the DNR at the pre-application conference. The plans will describe the operating life of the mine, including the rate of mining and anticipated changes in that rate, the mining activities to be conducted, as well as the design, methods, sequence, and schedules of reclamation including closure and post-closure maintenance.

Financial assurance bond

A financial assurance bond is required to ensure that there is a source of funds to be used by the DNR if the permittee fails to perform reclamation activities or corrective action required by the DNR. This will be required prior to the start of mining.

Application Fees

Applicants will be charged an application fee based on billable hours, using a professional services rate model. This is similar to the method used by the DNR for collecting and charging for work required for high-volume water appropriation permits.

Anticipated Review Time

It is the DNR's goal to complete all permit decisions within 150 days of the receipt of complete applications. The actual time will depend on the complexity of the project, the likelihood and number of potential impacts, staff time availability and responsiveness of the applicant to information requirements. Our guidance document requires a year of hydrogeologic monitoring prior to application. If the monitoring is conducted as required, and the data analyzed and incorporated into the project proposer's hydrogeologic conceptual model, the DNR anticipates permit review and decision taking no more than 90 days.

Annual Report

If a permit is issued, an annual report will be required that describes actual mining and reclamation completed during the past year, submits and analyzes groundwater and surface water monitoring data, identifies the mining and reclamation activities planned for the upcoming year, and submits a contingency reclamation plan to be implemented if operations cease in the upcoming year.

Corrective Action

On the observation of violations of the applicant's permit, immediate action will be taken by the DNR to have the mine operator correct the violation.

Annual Permit Fee

Ongoing monitoring and regular inspection of the mining operation will help ensure the protection of the trout stream resource. An annual silica sand mining trout stream setback permit fee will be charged to the mine operator based on our professional services rate and billable hours.

Existing Silica Sand Mining Operations

Silica sand mining operations that were operating before May 24, 2013 are not required to obtain the trout stream setback permit.

Additional Information

Silica Sand Rulemaking Webpage: http://www.dnr.state.mn.us/input/rules/silica_sand.html

DNR Silica Sand FAQ: http://files.dnr.state.mn.us/lands_minerals/silica_sand_fact_sheet.pdf

DNR Contact for Silica Sand Mining Trout Stream Setback Permit:

Tom Hovey, Department of Natural Resources, 500 Lafayette Road, Box 32, St. Paul, MN 55155-4032

Phone number: 651-259-5654

e-mail: tom.hovey@state.mn.us