

ROADSPREADING OF BRINE FOR DUST CONTROL AND ROAD STABILIZATION

Introduction

Brine produced from oil and gas wells and other sources such as brine treatment plants and brine wells have been used for beneficial use as a dust suppressant and road stabilizer on unpaved secondary road systems. This does not include brine produced from shale formations. Brine is present in subsurface formations and is typically produced along with oil and gas. Because of the potential for contaminants from the brine to leach into surface or ground waters, the Department of Environmental Protection (DEP) has developed guidelines that must be followed when spreading brine on unpaved roads. The guidelines were developed under the authority of Clean Streams Law, the Solid Waste Management Act, and Chapters 78 and 101 of the Rules and Regulations.

In accordance with the Clean Streams Law, it is unlawful to put, place or allow a discharge of any substance that would result in pollution of the waters of the commonwealth, including both surface and ground water. The purpose of these guidelines is to minimize the environmental impact resulting from the use of brine for road maintenance. The brine generator, the transporter, the applicator and the roadway administrator (e.g., PennDOT, municipalities or private owners) share the responsibility to assure that all activities are conducted in accordance with the guidelines and in a manner which will not result in pollution of the waters of the commonwealth.

DEP considers roadspreading of brine for dust control and road stabilization to be a beneficial use of the brine. Brine should only be spread at rates and frequencies necessary to control dust. For excess brine produced from oil and gas wells, operators may need to develop alternative disposal options such as deep well disposal or treatment and discharge.

Approval Procedure

Any person who spreads brine from oil or gas wells (other than brines produced from shale formations) or other sources (such as brine treatment plants and brine wells) on unpaved roads for dust suppression and road stabilization must submit a plan to DEP on a yearly basis for approval. The approval can be obtained by the operator, municipality, owner of the road, or the service company. The plan must show how the potential to pollute is minimized. Approval from DEP must be received before roadspreading can begin.

Plans must include the following information:

1. The name, address and telephone number of the person and company seeking the approval and of the person(s) doing the spreading. The license plate number of the brine spreader truck(s) is also to be submitted.
2. An original signed and dated statement from the municipality or other person authorizing the use of brine on their roads and that they will supervise the frequency of spreading.
3. A legible map of the municipality or area identifying the roads that are to receive the brine and brine storage areas not at the well site.
4. A description of how the brine will be applied, including the equipment to be used and the method for controlling the rate of application.
5. The proposed rate and frequency of application.
6. The identification of the geologic formation from which the brine is produced.
7. A representative chemical analysis of the brine for the following parameters: calcium, sodium, chloride, magnesium, and total dissolved solids.

DEP will review the plan to determine if all the information requested in items 1 through 7 is present. If the plan is complete and does not show a violation of any operating procedures, an approval will be granted. The approval will expire December 31 of the calendar year roadspreading was requested.

Operating Requirements

Any person who spreads brine must follow the conditions listed below under plans approved by the DEP:

1. The application of brine to unpaved roads must be performed in accordance with the approved plan.
2. The brine may only be applied at a rate and frequency necessary to suppress dust and stabilize the road. The rate and frequency of application must be controlled to prevent the brine from flowing or running off into roadside ditches, streams, creeks, lakes and other bodies of water or infiltrating to groundwater.
3. Recommended spreading rates: The road should initially be spread at a rate of up to one-half gallon per square yard (typically after the road has been graded in the spring). The road should subsequently be spread at a rate of up to one-third gallon per square yard no more than once per month unless—based on weather conditions, traffic volume or brine characteristics—a greater frequency is needed to control dust and stabilize the road. The application rate for race tracks and mining haul roads should be determined for each site and should not exceed one gallon per square yard.
4. Only production or treated brines (other than brines produced from shale formations) may be used. The use of drilling, fracing, or plugging fluids or production brines mixed with well servicing or treatment fluids, except surfactants, is prohibited. Free oil must be separated from the brine before spreading.
5. Brine must not be applied within 150 feet of a stream, creek, lake or other body of water.
6. Brine must be spread by use of a spreader bar with shut-off controls in the cab of the truck.
7. Brine must not be placed on sections of road having a grade exceeding 10 percent.
8. Brine must not be spread on wet roads, during rain, or when rain is imminent.
9. Each vehicle used to spread brine shall have a clearly legible sign identifying the applicator on both sides of the vehicle.
10. The company spreading the brine shall notify the appropriate regional DEP Oil and Gas Office the business day before spreading brine.
11. The producing oil and gas wells must be in compliance with the bonding requirements of the Oil and Gas Act.
12. The person who received approval for the roadspreading plan must submit a monthly report (5500-FM-OG0046) to DEP indicating the location and amount of brine spread during the month. This monthly report must be submitted by the 15th day following the month in which the brine was spread. This report must be submitted even if no spreading took place during that month.
13. Any revisions to the plan must be submitted to DEP for approval. Approval must be obtained prior to implementation of the revisions.
14. Failure to comply with all these conditions may result in DEP rescinding the plan approval.

Reporting Requirements

Transporters of residual waste must follow the requirements of 25 Pa. Code §299 Subchapter B (Standards for Collecting and Transporting of Residual Waste). Transporters must keep a daily operations record and file an annual operational report with DEP by March.

Oil and gas operators who generate brine must report the amount on their Annual Production Report. Instructions accompany the Annual Production Report describing how to report brine being roadspread.

Where are plans submitted?

Southwest Regional Office
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FAX: 412-442-4328

Northwest Regional Office
Oil and Gas Program
230 Chestnut Street
Meadville, PA 16335-3481
Telephone: 814-332-6860
FAX: 814-332-6121

Eastern Regional Office
Oil and Gas Program
208 West Third Street
Williamsport, PA 17701-6448
Telephone: 570-321-6550
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For more information, visit www.depweb.state.pa.us, keyword: Oil and Gas.