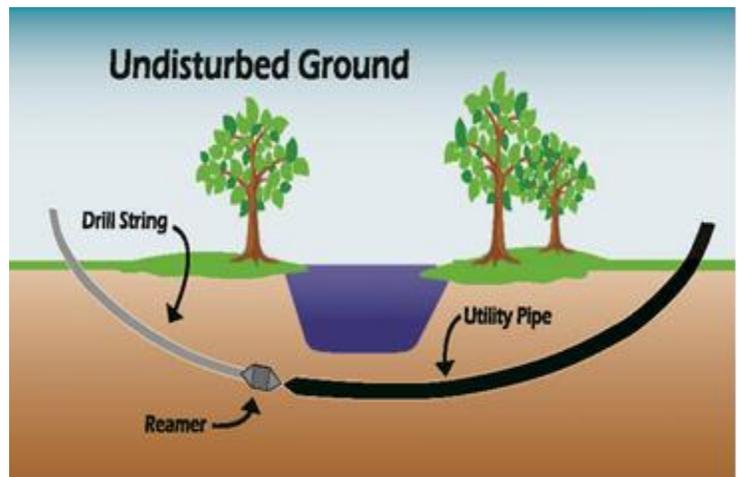


Horizontal Directional Drilling for Utility Line Installation

Disposal of Horizontal Directional Drilling Wastes and Protection of Water Resources

Horizontal directional drilling (HDD) is a method of trenchless technology commonly used in the installation of various utility pipelines and conduits. It is a common way of getting utility lines from one point to another by directionally boring under obstacles or environmentally sensitive areas. HDD may be used, for example, in getting under rivers, roadways or hillsides where typical trenching technologies would not be cost effective, plausible or may be environmentally intrusive.

With the increase in natural gas pipelines installation throughout the state, there is increased HDD activity. And while HDD is less intrusive to the ground surface, there are some issues that need to be addressed to protect the environment and water resources associated with the activity. Drill cuttings and spent drilling fluids generated from HDD activity need to be properly managed. In addition, site operators need to take measures to prevent storm water erosion and runoff from entering a stream, waterbody or wetland.



Management Options for Drill Cuttings and Spent Drilling Fluids

Most directional boring machines use drilling fluids in the installation of underground pipes and conduits. Drilling fluid is generally a mixture of bentonite clay and water. Commercially produced drilling additives are sometimes mixed with the drilling fluid to improve the drilling performance. Drilling fluids are pumped into the receiving hole forcing drill cuttings back to the surface where they are either allowed to settle out in a pit or removed mechanically in a recovery system. Drill cuttings are primarily earthen material removed from the drilling/boring process. Spent drilling fluids and drilling additives are products that may not be as benign as the drill cuttings. Standard practice in the HDD industry is to recycle or recover as much of the drilling fluids as possible at the location. However, once the project is complete, disposal of these spent drilling fluids is also necessary.

Spent drilling fluids containing solely bentonite clay are considered "earthen material" and may be buried or land applied on-location within the right-of-way of the drilling operation or at a designated property. Drill cuttings resulting from HDD using solely bentonite clay and water are also considered "earthen material" and may be managed similarly. This fact sheet provides best management practices that can be employed to ensure burial and land application activities prevent runoff, transport of material to surface water, or contamination of ground water resources.

Spent drilling fluids containing refined oil-based substances or other commercially produced additives are defined as an industrial waste and must be disposed at a licensed municipal solid waste landfill or other location authorized by Ohio EPA. Prior to landfill disposal, these spent drilling fluids may require solidification in order to pass the paint-filter test.

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Siting and Best Management Practices (BMPs) for Burial of “Earthen Material” On-location or at a Designated Property

If these best management practices and siting criteria below are followed for the burial location or any intermediate storage unit (for example, pond, settling basin, etc.), then there will be no permitting requirements through the Ohio EPA. Therefore, the Agency strongly recommends following ALL the BMPs identified below. Also note that if discharges from these operations are severe enough to violate water quality standards, Ohio EPA can then require that a permit be obtained to alleviate the impacts from those inadvertent discharges.

If the drilling project proposes to bury drill cuttings and/or spent drilling fluids defined as “earthen material” on-location or at a designated property, use the following best management practices and siting requirements.

- For an on-location burial option, the site should be fully contained within the right-of-way of the utility or transmission line being installed.
- The spent drilling fluids and drill cuttings should be buried in either an excavated pit or mixed with top soil removed from the utility right-of-way during utility line construction/installation purposes, if appropriate, at a ratio of one to one.
- The material should be buried in a manner to prevent ponding or transport of storm water through the material (for example, crested in the middle and a slope to edge of disposal area).
- The burial location should not be located in sensitive hydrogeological areas (for example, shallow ground water, shallow sand and gravel lenses or fractured bedrock, etc.).
- The burial location should be located at least 100 feet from any permanent surface water.
- The burial location should be located a minimum of 100 feet from any potable water supply well and 300 feet from any large supply public water supply well.
- The burial location should be managed and have best management practices applied similarly to any construction site regulated through the construction storm water program which includes seeding, stabilization, and the installation of sediment controls. The main goal of this action is to ensure that sediment laden water is not discharged to a water resource.
- For more information on best management practices guidance, go to:
 - ODNR’s Best Management Practices for Oil and Gas Well Site Construction at: www.dnr.state.oh.us/Portals/11/oil/pdf/BMP_OIL_GAS_WELL_SITE_CONST.pdf
 - ODNR’s Rainwater and Land Development Manual at: www.dnr.state.oh.us/water/rainwater/default/tabid/9186/Default.aspx

Siting and Best Management Practices for Land Application of “Earthen Material”

As with the burial of “earthen materials described above, the land application of “earthen materials” (drill cuttings or spent drilling fluids) may be appropriate if proper best management practices are followed to ensure proper protections of surface and/or ground waters. The following best management practices should be met for land application of these “earthen materials.”

- The material should not be land applied during a precipitation event or when a significant rain event is forecast within 24 hours.
- The material should not be land applied in a fashion that would result in ponding on the surface of the ground.
- The material should not be land applied on property with a slope greater than fifteen percent.
- The material should not be land applied on frozen or snow covered ground.
- The material should not be land applied within 50 feet of any surface waters of the state (for example, river, stream, ditch, swale, pond, etc.).
- The land application area should not be located in sensitive hydrogeological areas (for example, shallow ground water, shallow sand and gravel lenses or fractured bedrock, etc.).
- The material should not be land applied within 100 feet of any private or public potable water source.

Additional Information or Resources

Ohio EPA does not envision management alternatives other than those specified above. If an alternative management option is contemplated, a permit issued by Ohio EPA may be necessary.

Contact

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