

## **STATEMENT OF BASIS**

**Permit Number:** SDG070000

**Permit Type:** General Permit for Temporary Discharge Activities

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This document is intended to explain the basis for the requirements contained in the draft Surface Water Discharge (SWD) General Permit. This document provides guidance to aid in complying with the general permit requirements. This guidance is not a substitute for reading the draft general permit and understanding its requirements.

### **APPLICABILITY**

This general permit is proposed for various activities that result in temporary discharges of relatively uncontaminated water to surface waters of the state. Discharge activities will be reviewed on a case-by-case basis to determine eligibility for coverage under this general permit. Discharges that are not temporary in nature are not eligible for coverage under this general permit. In addition, discharges that contain sanitary wastewater or toxic pollutants in toxic amounts are not eligible for coverage under this permit.

### **PERMIT DESCRIPTION**

Various activities often result in temporary discharges to waters of the state. All point source discharges are subject to the requirements of the South Dakota Pollution Control Act and Administrative Rules of South Dakota (ARSD), Chapters 74:52:01 through 74:52:11. Due to the nature of the scheduling of temporary activities, obtaining an individual SWD permit may significantly impact the timing of a project due to administrative delays. The intent of the general permit for temporary discharges is to:

1. Facilitate the scheduling of temporary discharge activities by reducing the administrative delays in their authorization;
2. Establish uniform criteria for management practices and effluent limits for discharges from these activities; and,
3. Promote a consistent permitting and enforcement posture with respect to these temporary discharge activities.

Typical activities which may result in a discharge include, but are not limited to, construction dewatering, hydrostatic testing, pump testing of water wells, draining swimming pools and similar structures, dewatering petroleum contaminated ground water, dewatering ground water with other contaminants, and other various short-term discharges.

























## **DRAINAGE ISSUES**

Counties have the authority to regulate drainage. The permittee is responsible for getting any necessary drainage permits from the responsible county **prior** to discharging.

## **ENDANGERED SPECIES**

This is a renewal of an existing general permit. No listed endangered species are expected to be impacted by activities related to this general permit.

## **TERMINATION OF COVERAGE**

When the temporary discharge activities are complete, the permittee is required to submit a Notice of Termination to 6 ' ' \$(Appendix D of the draft general permit). The Notice of Termination indicates that all temporary discharge activities have ended.

The permittee is required to terminate coverage within thirty days after all authorized discharges have ceased. Authorized discharges are those discharges that were included in the permittee's Notice of Intent form.

All required reports and submissions shall be submitted to SDDANR prior to terminating coverage.

## **PERMIT EXPIRATION**

A five-year general permit is recommended.

If this general permit should expire before a new permit is reissued, the terms and conditions of the expired general permit will remain effective and enforceable until the effective date of the reissued general permit. SDDANR will continue the general permit coverage for each facility covered under the draft general permit upon the expiration date, provided the facility submits a Notice of Intent for Reauthorization to continue coverage.

## **PERMIT CONTACT**

This statement of basis and the draft general permit were developed by Jill Riedel, Engineer III for the Surface Water Quality Program. Any questions pertaining to this statement of basis or the draft general permit can be directed to the Surface Water Quality Program, at (605) 773-3351.

January 16, 2018

# **ATTACHMENT 1**

## **Best Management Practices (BMPs)**

**BEST  
MANAGEMENT  
PRACTICES  
GUIDE**

## Silt Fences



[https://www.landandwater.com/features/vol50no2/vol50no2\\_2.html](https://www.landandwater.com/features/vol50no2/vol50no2_2.html)

### Purpose

Silt fences are a temporary sediment control used to contain soil on exposed portions of a site as well as soil stockpiles. Metal or wooden posts hold up the porous fabric that makes up the silt fence. In proper operating condition, the silt fence will allow water to pass through while retaining sediment on-site. Silt fences are most effective on larger particles and may allow finer particles to pass through. It is recommended that you consider you other BMPs alongside silt fences to prevent sediment from discharging offsite.

### Application

Drive stakes to support the silt fence into the ground so that half the stake's height is below ground. Use strong plastic zip ties to attach the fabric to the stakes. Trench the fabric at least 6-8 inches into the ground, which can be achieved used a static slicing machine or a trencher. The fabric should be upright and taut along the entire length of the silt fence. Driving a tractor wheel over each side of the silt fence helps to compact the soil around the fence, preventing the fence from washing out.

For peak effectiveness, avoid long runs of silt fences, as failure in one section of the fence will render the entire run ineffective. Instead, install short runs of adjacent silt fences in the "J" shape to share the sediment load. The area draining to a silt fence should not exceed 0.25 acres per 100 feet of silt fence.

### Maintenance

Inspect silt fences at least weekly and after rain events. Repair or replace silt fences that are no longer in effective operating condition. Remove sediment or add an additional silt fence when sediment reaches half the height of the silt fence.

### Season

Silt fences can be an effective measure of sediment control all year if installed properly.

### References

Oregon DEQ (Department of Environmental Quality). 2013. *Construction Stormwater Best Management Practices Manual*. Oregon Department of Environmental Quality, Water Quality Division, Portland, OR.

USEPA (U.S. Environmental Protection Agency). 2014. *Water: Best Management Practices, Seeding*. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

SDDOT (SD Department of Transportation). 2014. *Erosion and Sediment Control and Stormwater Management*. SD Department of Transportation, Pierre, SD.



## Vegetative Buffers



[https://www.dot.state.oh.us/Divisions/ConstructionMgt/OnlineDocs/Specifications/2002CMS/2003\\_Manual\\_for\\_web/207.htm](https://www.dot.state.oh.us/Divisions/ConstructionMgt/OnlineDocs/Specifications/2002CMS/2003_Manual_for_web/207.htm)

vegetative buffer will depend on the slope of the buffer zone, the slope of adjacent disturbed areas, type and density of vegetation, and other factors. When practicable, avoid disturbing preexisting vegetation onsite. Soil compaction, soil stockpiles, and grading near or on vegetation can impact vegetation onsite and reduce the effectiveness of the vegetative buffer.

Grasses are recommended for establishing vegetative buffers, due to their extensive coverage above ground to slow and filter runoff, as well as a dense root system to hold sediment in place. Other types of vegetation can also be effective as vegetative buffers and the optimum type of vegetation will depend upon onsite conditions.

### Maintenance

Inspect vegetation regularly, especially before vegetation is completely established. Remove sediment if the buffer zone becomes full of sediment. Reseed, fertilize, or otherwise encourage vegetative growth until dense vegetative cover is established. Clearly mark vegetative buffer zones on the SWPPP and onsite to prevent disturbance of vegetative buffer zones.

### Season

Vegetative buffers can be an effective form of sediment control all year, if properly implemented.

### References

Oregon DEQ (Department of Environmental Quality). 2013. *Construction Stormwater Best Management Practices Manual*. Oregon Department of Environmental Quality, Water Quality Division, Portland, OR.

USEPA (U.S. Environmental Protection Agency). 2014. *Water: Best Management Practices, Seeding*. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

SDDOT (SD Department of Transportation). 2014. *Erosion and Sediment Control and Stormwater Management*. SD Department of Transportation, Pierre, SD.

### Purpose

Vegetative buffers are a form of sediment control that: filter runoff, control runoff velocity, and trap sediment to prevent sediment and other pollutants from discharging off-site. Vegetative buffers can include areas of preexisting vegetation left undisturbed or areas where vegetation is established for the purpose of controlling runoff.

### Application

Perimeter boundaries of the site can be left undisturbed, if already vegetated, or seeded to establish a vegetative buffer. The necessary width of

## Construction Entrances



<https://www.pca.state.mn.us/water/construction-stormwater>

### Purpose

Construction entrances prevent vehicles from tracking sediment offsite. Rock pads, rumble tracks, wheel washes, or other forms of sediment removal can all be used as construction entrances/exits.

### Application

Install construction entrances/exits in each area where vehicles will access the site. Strategic placement of entrances/exits may reduce costs by decreasing the number of entrances/exits necessary.

A rock pad should be placed over a filter cloth or geotextile to prevent packing the rock into the fine material beneath, allowing sediment to escape. Rocks used in rock pads should be large rock, 4-6 inches in diameter. Install the rock at least 6 inches deep to ensure sediment is removed properly.

A rumble track can be placed temporarily on paved roads to prevent discharging sediment offsite. Wheel washes can be used at construction exits to wash sediment from truck tires.

### Maintenance

Add rock to the rock pad when necessary. Remove sediment from rumble tracks as necessary. Remove any sediment that has been tracked offsite by performing street sweeping or other sediment removal BMPs.

### Season

Construction entrances can be an effective form of track out control all year, if properly implemented.

### References

Oregon DEQ (Department of Environmental Quality). 2013. *Construction Stormwater Best Management Practices Manual*. Oregon Department of Environmental Quality, Water Quality Division, Portland, OR.

USEPA (U.S. Environmental Protection Agency). 2014. *Water: Best Management Practices, Seeding*. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

SDDOT (SD Department of Transportation). 2014. *Erosion and Sediment Control and Stormwater Management*. SD Department of Transportation, Pierre, SD.

## Sediment Basins



<http://www.fairfaxcounty.gov/nvswcd/newsletter/esc.htm>

### Purpose

A sediment basin is usually a temporary, but can be a permanent, sediment storage area to prevent sediment from washing offsite. Sediment basins allow water to flow into the basin, and then contain the water to allow sediment to settle to the bottom. Sediment basins are most effective for large sites more than 5 acres.

### Application

Form earth embankments over low areas or excavate to build sediment basins. Design in such a way that the flow from the inlet to outlet is slow enough to allow sediment to settle out of the water.

### Maintenance

In time, permanent sediment basins will lose holding capacity as they fill with sediment. The time between sediment removals is dependent on size of the basin and the area contributing to the sediment basin. This usually involves the use of an excavator to scoop out the sediment. Mowing of the seeded embankment may be required. Removal of foreign objects that may clog the outlet is required to ensure proper flow through the basin.

### Season

Construction should occur prior to the wet season for the particular location of the basin. Sediment basins can be effective forms of sediment control throughout the year when runoff containing sediment flows to the sediment basin.

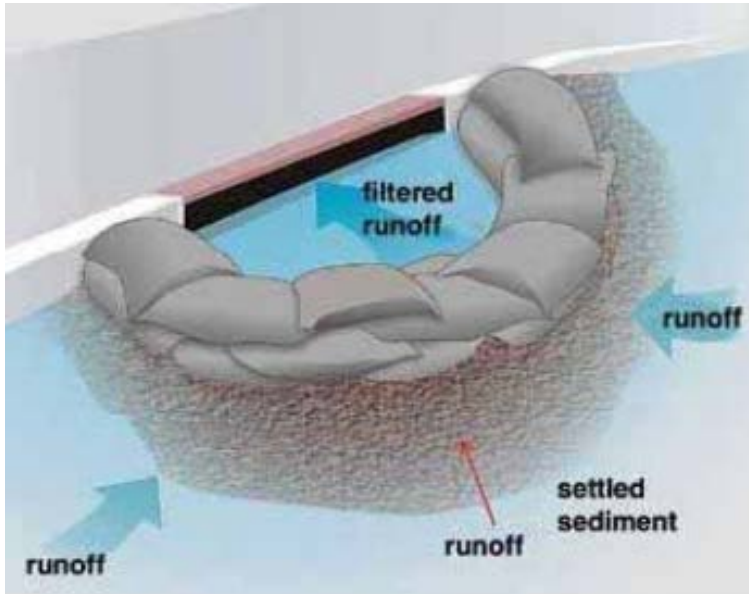
### References

Oregon DEQ (Department of Environmental Quality). 2013. *Construction Stormwater Best Management Practices Manual*. Oregon Department of Environmental Quality, Water Quality Division, Portland, OR.

USEPA (U.S. Environmental Protection Agency). 2014. *Water: Best Management Practices, Seeding*. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

Illinois DOT (Department of Transportation), 2014. *Sediment Basin*. Illinois Department of Transportation.

## Storm Drain Inlet Protection



[https://stormwater.pca.state.mn.us/index.php?title=Sediment\\_control\\_practices\\_-\\_Storm\\_drain\\_inlet\\_protection](https://stormwater.pca.state.mn.us/index.php?title=Sediment_control_practices_-_Storm_drain_inlet_protection)

### Purpose

Storm drain inlet protection prevents sediment and other debris from entering and potentially clogging or reducing the effectiveness of storm drains. A variety of methods can be used to allow water to flow into the storm drain inlet while preventing sediment from entering.

### Application

Excavating around the inlet, fabric barriers, sandbags, or other methods can be used to protect storm drain inlets from sediment runoff. If excavating around the inlet, excavate 1-2 feet deep. Make sure fabric inlet protection is staked firmly into the ground if inlets are adjacent to soils to prevent soil flowing beneath the fabric.

Install inlet protection on all storm

drain inlets that could receive runoff from the construction site. Inlet protection should be properly installed before construction begins. When installing inlet protection BMPs, make sure that there are no gaps that could allow sediment to reach the storm drain.

Different inlet protection BMPs may be necessary during winter months to avoid damage from snow removal equipment. Winter inlet protection methods require lots of upkeep, usually daily installation and removal. Temporarily stabilize the site before removing inlet protection for the night. Filter inserts; compost, wood chip, or rock filter logs; and sediment moats are all types of winter inlet protection.

### Maintenance

Inspect storm drain inlets frequently to ensure that controls remain in effective operating condition. During rain events inspect inlet protection to verify water is flowing into the drain, but sediment is blocked. Repair or replace inlet protection as necessary, and remove sediment when the controls become full and when sediment controls are removed after construction ends.

### Season

Inlets should be protected all year, though the type of inlet protection used may vary in the winter months.

### References

Oregon DEQ (Department of Environmental Quality). 2013. *Construction Stormwater Best Management Practices Manual*. Oregon Department of Environmental Quality, Water Quality Division, Portland, OR.

USEPA (U.S. Environmental Protection Agency). 2014. *Water: Best Management Practices, Seeding*. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

MNDOT (MN Department of Transportation). November 14, 2010. *Winter Stabilization Best Management Practice Guidance Document*. MN Department of Transportation, St. Paul, MN.



## Surface Roughening



### Purpose

Surface roughening is a technique to temporarily control erosion. Surface roughening establishes ridges that flow horizontally across a slope. Facing the slopes against the flow of water helps to slow the velocity of the flow and trap sediment. Surface roughening is useful for steep slopes, but should be used in conjunction with other sediment and erosion control BMPs.

### Application

To establish soil roughening, place the grooves of the machinery to form ridges perpendicular to the contours of the slope or cut parallel to the slope. If

<http://prj.geosyntec.com/npsmanual/surfacerooughening.aspx>

seasonally appropriate, seed and mulch soils after surface roughening. Surface roughening should not be the only erosion control BMP on a site but, with other BMPs, can be an effective method to prevent discharging soil offsite. Do not use surface roughening for rocky soils.

### Maintenance

Inspect areas of surface roughening at least weekly and after rain events to look for erosion rills. Re-roughen soils if ridges are washed out.

### Season

Surface roughening can be a useful means of erosion control all year when used in conjunction with other BMPs, and is particularly useful for winter erosion control, when other BMPs may be more difficult to implement.

### References

Oregon DEQ (Department of Environmental Quality). 2013. *Construction Stormwater Best Management Practices Manual*. Oregon Department of Environmental Quality, Water Quality Division, Portland, OR.

USEPA (U.S. Environmental Protection Agency). 2014. *Water: Best Management Practices, Seeding*. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

SDDOT (SD Department of Transportation). 2014. *Erosion and Sediment Control and Stormwater Management*. SD Department of Transportation, Pierre, SD.

## Rip Rap



[https://stormwater.pca.state.mn.us/index.php?title=Sediment\\_control\\_practices\\_-\\_Outlet\\_energy\\_dissipation](https://stormwater.pca.state.mn.us/index.php?title=Sediment_control_practices_-_Outlet_energy_dissipation)

### Purpose

The purpose of rip rap is to prevent erosion in areas with high flow and slow the velocity of the water flow. Rip rap consists of large rocks piled together to hold sediment in place.

### Application

Place a filter layer below a layer of durable, varied-size stones to form rip rap. Use larger stones for areas of higher flow, with diameters from 2-24 inches. Rip rap is not an appropriate erosion control technique on slopes greater than 2 horizontal to one vertical.

Rip rap can be an effective means of preventing erosion at outlet points, especially

outlets that experience high flows. Use stone that can withstand winter conditions and remain in proper operating condition. Install rip rap at ground level, not on top of soil. Excavation may be necessary to ensure that rip rap is at ground level.

### Maintenance

Inspect rip rap frequently, at least weekly and after rain events. If maintenance is necessary, make repairs to rip rap as soon as possible.

### Season

Rip rap can be an effective means of erosion control all year, if installed properly.

### References

Oregon DEQ (Department of Environmental Quality). 2013. *Construction Stormwater Best Management Practices Manual*. Oregon Department of Environmental Quality, Water Quality Division, Portland, OR.

USEPA (U.S. Environmental Protection Agency). 2014. *Water: Best Management Practices, Seeding*. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

SDDOT (SD Department of Transportation). 2014. *Erosion and Sediment Control and Stormwater Management*. SD Department of Transportation, Pierre, SD.

## Straw Bales



<https://www.cityofmadison.com/engineering/stormwater/ECPracticeExamples.cfm>

### Purpose

Straw bales can be used to reduce the velocity of water runoff and retain some sediment onsite. The EPA recommends avoiding the use of straw bales in favor of other BMP practices.

### Application

Do not use straw bales in drainage channels, or other areas with potential for high flows. Straw bales are not effective for large rain events

Always stake straw bales firmly into the ground, trench bales at least 4 inches into

the ground, and fill in gaps after trenching.

String or wire should bind the bale

horizontally, so that the string or wire does not

touch the ground. Steel wire should be at least 16 gauge in diameter, and nylon or polypropylene string should be at least 12 gauge in diameter. Place bales end to end, with no gaps in between bales, to control sheet runoff.

For winter use, wrap straw bales in a geotextile fabric.

### Maintenance

Straw should be replaced approximately every 3 months. Remove sediment that has collected around straw bales when it reaches one half the height of the bale, at a minimum. Inspect bales frequently, and repair or replace bales as necessary, or every 3 months at a minimum.

### Season

Straw bales can help to control sediment runoff all year, if installed properly.

### References

MNDOT (MN Department of Transportation). November 14, 2010. *Winter Stabilization Best Management Practice Guidance Document*. MN Department of Transportation, St. Paul, MN.

USEPA (U.S. Environmental Protection Agency). 2014. *Water: Best Management Practices, Seeding*. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

Washington State Department of Ecology. September 2004. *Stormwater Management Manual for Eastern Washington*. Washington State Department of Ecology, Water Quality Program, Olympia, WA.

## Erosion Control Blanket (Mat)



<https://www.codot.gov/programs/environmental/water-quality/documents/CDOT%20Pocket%20Guide%20122211.pdf>

### Purpose

Erosion control blankets, or mats, are fabrics used as a temporary erosion and sediment control measure. They are often made of synthetic or biodegradable materials.

### Application

Place erosion control blanket on slopes and disturbed soils to provide quick temporary sediment and erosion control until permanent measures can be established. Erosion control blankets can also help to establish vegetation. Some erosion control blankets have seeding inside, but if seeding separately, seed the ground before installing erosion control blankets.

Erosion control blankets should be staked to the ground. The entire blanket should maintain contact with the ground, except where blankets overlap. Uphill blankets should overlap on top of downhill blankets to ensure stormwater does not wash under the mats; however, blankets should be installed vertically on long slopes.

The best type of erosion control blanket depends on site conditions. Consider factors such as length of time mat will be in use, rainfall expected, slope gradients, and other site conditions when selecting the appropriate material for an erosion control blanket.

For winter installation, clear snow from soil, if necessary, and install erosion control blankets directly on disturbed soils.

### Maintenance

Inspect erosion control blankets frequently, at least weekly and after rain events, for flaws such as holes and tears. Repair or replace blankets with flaws as soon as possible upon discovery. Make sure that erosion control blankets stay in contact with the ground.

### Season

Erosion control mats can be an effective form of temporary erosion and sediment control all year.

### References

- MNDOT (MN Department of Transportation). November 14, 2010. *Winter Stabilization Best Management Practice Guidance Document*. MN Department of Transportation, St. Paul, MN.
- Oregon DEQ (Department of Environmental Quality). 2013. *Construction Stormwater Best Management Practices Manual*. Oregon Department of Environmental Quality, Water Quality Division, Portland, OR.
- USEPA (U.S. Environmental Protection Agency). 2014. *Water: Best Management Practices, Seeding*. U.S. Environmental Protection Agency, Office of Water, Washington, DC.



## Mulching



[https://stormwater.pca.state.mn.us/index.php?title=Temporary\\_construction\\_erosion\\_and\\_sediment\\_control](https://stormwater.pca.state.mn.us/index.php?title=Temporary_construction_erosion_and_sediment_control)

### Purpose

The purpose of mulching is to establish temporary erosion control using grass, straw, hay, wood, or other plant material to protect disturbed soils. Mulching stabilizes seeds as well as soils and can protect seeds and soils from temperature variance in addition to stormwater runoff.

### Application

Install mulches directly on top of disturbed soils. The rate of mulch applied per acre will vary depending on the type of mulch selected, follow manufacturer specifications. Use tackifier or netting to

hold mulch in place if necessary, especially on steep slopes. Soil should not be discernible beneath the mulch. If seeding, seed soils before applying mulch.

In the winter, mulch may be applied on top of snow and will approach the soil surface as snow melts. Disk anchoring or other anchoring methods may be necessary to ensure mulch is not blown away.

Hydraulic mulches are applied by hydroseeding equipment and typically used in areas with steeper slopes or where equipment access would be difficult.

### Maintenance

Inspect mulched areas frequently, weekly and after rain events. Reseed and reapply mulch in areas where mulch has loosened or washed out.

### Season

Mulching can be an effective form of erosion control all year, if installed properly.

### References

MNDOT (MN Department of Transportation). November 14, 2010. *Winter Stabilization Best Management Practice Guidance Document*. MN Department of Transportation, St. Paul, MN. [h](#)

Oregon DEQ (Department of Environmental Quality). 2013. *Construction Stormwater Best Management Practices Manual*. Oregon Department of Environmental Quality, Water Quality Division, Portland, OR.

USEPA (U.S. Environmental Protection Agency). 2014. *Water: Best Management Practices, Seeding*. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

## Seeding



<http://www.sddot.com/resources/manuals/SDDOTESCFieldGuidev10Press.pdf>

### Purpose

The purpose of seeding is to establish vegetative cover, which can be a form of temporary or permanent stabilization. After vegetation has been established, roots will help to hold soils in place to prevent erosion. Vegetation will also protect soils from disturbance by wind or rain.

### Application

The ground to be seeded should contain 4-6 inches of topsoil or compost. The most suitable type of vegetation for any site depends on climate, soil types,

and landscape. Follow manufacturer's specifications to determine how much seed your site will require.

Mulch or matting can be used to secure and protect the seed before vegetative cover is established. If seeding is not immediately achievable, or will not produce immediate cover (such as dormant seed that will not germinate until spring), mulching and tackifier may be necessary as temporary stabilization, before permanent vegetative cover can be established.

Hydro seeding (see Hydro seeding page), the spreading of a mix of mulch, seed, and fertilizer can be used to establish vegetative cover, but will often require more than one application to achieve 70% native vegetative cover.

### Maintenance

The goal of seeding is to establish perennial vegetative cover, but maintenance may be required. Watering is critical in establishing vegetative cover. The soil should be kept moist after seeding, until vegetative cover is established. After vegetation has been established, follow manufacturer specifications regarding fertilizing and watering. Areas that do not achieve 70% of the native vegetative cover may need to be reseeded. Mowing may be required depending on the type of vegetation that is established.

### Season

The optimal time for seeding will depend on the type of vegetation to be seeded, but seeding should be complete before October 1<sup>st</sup>.

### References

Oregon DEQ (Department of Environmental Quality). 2013. *Construction Stormwater Best Management Practices Manual*. Oregon Department of Environmental Quality, Water Quality Division, Portland, OR.

USEPA (U.S. Environmental Protection Agency). 2014. *Water: Best Management Practices, Seeding*. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

Wisconsin Department of Natural Resources. 2003. *Seeding for Construction Site Erosion Control*. Wisconsin Department of Natural Resources, Madison, WI.

## Hydro Seeding



[https://stormwater.pca.state.mn.us/index.php?title=Temporary\\_construction\\_erosion\\_and\\_sediment\\_control](https://stormwater.pca.state.mn.us/index.php?title=Temporary_construction_erosion_and_sediment_control)

### Purpose

Hydro seeding is a method used to establish temporary or permanent vegetative cover to stabilize disturbed soils, preventing erosion and controlling sediment runoff.

### Application

Hydro seeding is the spreading of a mix of mulch, seed, and fertilizer, and can be used to establish vegetative cover, but will often require more than one application to achieve 70% native vegetative cover.

Choose a composition of hydro seed that is compatible with onsite conditions. Use mixes specific for winter use when hydro seeding during

the winter. Hydro seeding must occur directly on soil; do not attempt to hydro seed over snow cover.

### Maintenance

If hydro seeding occurs in areas where stormwater runoff may be expected to flow, use erosion control mats to hold the hydro seeding mix in place.

### Season

Seasonal appropriateness of hydro seeding will depend on type of mix and local conditions, but temporary stabilization methods may be required over hydro seeding if hydro seeding occurs during winter months.

### References

MNDOT (MN Department of Transportation). November 14, 2010. *Winter Stabilization Best Management Practice Guidance Document*. MN Department of Transportation, St. Paul, MN.

Oregon DEQ (Department of Environmental Quality). 2013. *Construction Stormwater Best Management Practices Manual*. Oregon Department of Environmental Quality, Water Quality Division, Portland, OR.

USEPA (U.S. Environmental Protection Agency). 2014. *Water: Best Management Practices, Seeding*. U.S. Environmental Protection Agency, Office of Water, Washington, DC.



## Sodding



[http://www.extension.umn.edu/garden/landscaping/maint/newlawn\\_9.html](http://www.extension.umn.edu/garden/landscaping/maint/newlawn_9.html)

### Purpose

Sodding can be a temporary or permanent form of stabilization. Sod controls stormwater runoff velocity as well as erosion. Sod can be used to quickly establish vegetative stabilization on disturbed areas, as well as channels of stormwater runoff.

### Application

The type of sod selected will depend on the conditions of the site to be sodded. Choose sod types adapted to the conditions onsite.

Make sure that sod is uniform thickness. Clear the soil of any large rocks or clods. Apply sod perpendicular to the

direction of stormwater flow and stagger section placement so the ends of each section are placed away from the end of sections above and below. Anchor the sod into the soil during establishment.

Dormant sod can be placed during times of year when seeding or normal sodding is not appropriate. Make sure soil is properly prepared for dormant sodding and sod is anchored into soil.

### Maintenance

Water sod frequently during establishment and regularly after sod has been established. Fertilize as necessary, during times appropriate for the type of sod selected. Reapply sod or reseed areas that are not established.

### Season

Sod can be an effective means of erosion and sediment control during much of the year, but may be difficult to establish during the winter months.

### References

MNDOT (MN Department of Transportation). November 14, 2010. *Winter Stabilization Best Management Practice Guidance Document*. MN Department of Transportation, St. Paul, MN.

USEPA (U.S. Environmental Protection Agency). 2014. *Water: Best Management Practices, Seeding*. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

Washington State Department of Ecology. September 2004. *Stormwater Management Manual for Eastern Washington*. Washington State Department of Ecology, Water Quality Program, Olympia, WA.

## Dust Control



<http://www.sddot.com/resources/manuals/Erosionsedimentcontrolconstman.pdf>

disturbing or removing vegetative cover of areas that will not be immediately worked whenever possible. Phase construction to minimize the amount of soil exposed at once whenever practicable. If possible, limit work that creates dust when there is high wind.

### Purpose

Dust control reduces the creation of dust onsite, reducing wind erosion as health risks associated with breathing in the dust.

### Application

A variety of methods can be used to control dust onsite. Watering the ground can be effective in controlling dust, but water must not be allowed to run offsite. Vegetative cover, mulching, tilling, windscreens, and chemical dust suppressants can all be effective forms of dust control.

To avoid creating dust, it is best to avoid

### Maintenance

Maintenance depends on the type of dust control selected. Inspect BMPs regularly to ensure continued effectiveness of dust control techniques.

### Season

The seasonal appropriateness of dust control BMPs will depend on the type of control selected, site conditions, and local climate. Ensure that the dust control BMPs selected are appropriate for the seasonal conditions onsite.

### References

USEPA (U.S. Environmental Protection Agency). 2014. *Water: Best Management Practices, Seeding*. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

Washington State Department of Ecology. September 2004. *Stormwater Management Manual for Eastern Washington*. Washington State Department of Ecology, Water Quality Program, Olympia, WA.

## Floating Silt (Turbidity) Curtain



<https://connect.ncdot.gov/projects/Roadway/RoadwayDesignAdministrativeDocuments/Best%20Management%20Practices%20for%20Construction%20and%20Maintenance%20Activities.pdf>

### Purpose

Floating silt curtains, or floating turbidity curtains, block sediment in waterbodies and cause sediment to settle to the bottom of the water body.

### Application

Floating silt curtains should be installed near the shore of the waterbodies to float on the surface of the water and should also be secured to the bottom of the waterbody. The installment of the silt curtain should allow for the rise and fall of water levels.

Floating silt curtains alone are not an effective form of sediment control to prevent sediment from being discharged offsite, but can help reduce the effect of sediment that has bypassed other forms of perimeter control.

### Maintenance

Inspect floating silt curtains regularly, weekly and after rain events, to ensure continued effectiveness. Check buoys, anchor lines and anchors regularly and remove debris as needed. Minimize turbidity when removing silt curtains.

### Season

Silt curtains may not be effective during winter months if the surface of the water body is subject to freezing.

### References

SDDOT (SD Department of Transportation). 2014. *Erosion and Sediment Control and Stormwater Management*. SD Department of Transportation, Pierre, SD.

Mississippi DEQ, 2011. *Erosion Control, Sediment Control and Stormwater management on Construction Sites and Urban Areas*. Mississippi Department of Environmental Quality

## Check Dams



[https://stormwater.pca.state.mn.us/index.php?title=File:Example\\_of\\_rock\\_check\\_dam.jpg](https://stormwater.pca.state.mn.us/index.php?title=File:Example_of_rock_check_dam.jpg)

### Purpose

Check dams decrease the velocity of concentrated flows in areas of water conveyance.

### Application

Check dams are made of rock, logs, sandbags, or gravel and placed in ditches or areas of concentrated flow, perpendicular to direction of water flow. Do not build check dams in streams unless you have prior approval from the State.

Place a filter fabric or geotextile material beneath the check dam. Check dams should not be constructed by dumping a pile of material in

ditch. The center of the check dam should be lower than the edges. The top of the downhill check dam should be at the least as high in elevation as the bottom of the uphill check dam, if built in series.

### Maintenance

Inspect check dams regularly, at least weekly and after rain events, and repair or replace dams that are no longer in proper operating condition. Additional rock or other material may be necessary to keep the check dam in proper operating condition. Remove sediment that has collected in front of check dams when it reaches one half the height of the check dam, or more frequently.

### Season

Check dams can be an effective form of velocity control all year, if installed properly.

### References

USEPA (U.S. Environmental Protection Agency). 2014. *Water: Best Management Practices, Seeding*. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

Washington State Department of Ecology. September 2004. *Stormwater Management Manual for Eastern Washington*. Washington State Department of Ecology, Water Quality Program, Olympia, WA.

## Gabions



<http://prj.geosyntec.com/npsmanual/gabions.aspx>

### Purpose

Gabions decrease surface exposure of soil near water, especially flowing water. Based on the material used to fill the gabion, they can be used to decrease the flow velocity.

### Application

Gabions are wire baskets filled with rock to hold back soil while allowing water to seep through. Gabions can be used for structural integrity or as a water control structure. They are effective in preventing erosion in locations exposed to flowing water. They can be filled with a variety of material ranging from sand to large stones. The fill material will affect

the infiltration rate of the Gabions as well as the roughness coefficient.

When designing a gabion the surrounding soil's percolation and infiltration rates should be considered when determining the proper fill material. A stable foundation should be provided. A filter fabric behind and under the gabion should be installed to prevent soil migration into and through the gabion, while still allowing water to flow through.

### Maintenance

Need to be checked for broken wires which may allow rock to be released due to the force of the flowing water. Large vegetative growth should be removed as it may damage the cage structure of the gabion. The soil behind the gabion should be inspected for erosion and the cause should be determined and corrected. Soil below the gabion should be inspected for signs of undercutting.

### Season

Gabions can be effective throughout the year, especially during times of moderate flow. Installation should occur during dry period as access to the location is improved.

### References

Fischenich, J. C., and Freeman, G. E. , May 2000. "Gabions for Streambank Erosion Control" EMRRP Technical Notes Collection (ERDC TN-EMRRP-SR-22), U.S. Army Engineer Research and Development Center, Vicksburg, MS.



## Sediment Trap



### Purpose

Sediment traps detain runoff long enough to allow sediment to settle out before discharging the runoff.

### Application

Sediment traps are small ponding areas made with an earth embankment to collect water and a rip-rap outlet structure. An outlet pipe and riser may be used as an outlet structure.

<http://erieconserves.org/your-development/construction/> Sediment traps should only be used for areas draining 5 acres or less. Side slopes should be 2:1 or less. Sediment traps should be installed prior to start of construction.

Sediment traps only remove medium sized particles,

### Maintenance

Inspect sediment traps regularly, at least weekly and after rain events. Additional rock or other material may be necessary to keep the outlet in operating condition. Remove sediment that has collected in the outlet and when the sediment trap fills to half the design depth. Check to see if side slopes need maintenance or repairs.

Sediment traps should be removed once upslope areas are stabilized.

### Season

Sediment traps can be an effective all year, if installed properly.

### References

Idaho Department of Environmental Quality. September 2005. *Storm Water Best Management Practices Catalog*. Idaho Department of Environmental Quality State Office, Water Quality Division, Boise, ID.

Washington State Department of Ecology. September 2004. *Stormwater Management Manual for Eastern Washington*. Washington State Department of Ecology, Water Quality Program, Olympia, WA.

# **ATTACHMENT 2**

## **Antidegradation Review**

Permit Type: General Permit for Temporary Discharge Activities – Renewal  
Permit #: SDG070000  
Receiving Stream: Varies Classification: Varies

## APPLICABILITY

1. Is the permit or the stream segment exempt from the antidegradation review process under ARSD 74:51:01? Yes  No  If no, go to question #2. If yes, check those reasons why the review is not required:

- Existing facility covered under a surface water discharge permit is operating at or below design flows and pollutant loadings;
- \*Existing effluent quality from a surface water discharge permitted facility is in compliance with all discharge permit limits;
- \*Existing surface water discharge permittee was discharging to the current stream segment prior to March 27, 1973, and the quality and quantity of the discharge has not degraded the water quality of that segment as it existed on March 27, 1973;
- \*The existing surface water discharge permittee, with DENR approval, has upgraded or built new wastewater treatment facilities between March 27, 1973, and July 1, 1988;
- The existing surface water discharge permittee discharges to a receiving water assigned only the beneficial uses of (9) and (10); the discharge is not expected to contain toxic pollutants in concentrations that may cause an impact to the receiving stream; and DENR has documented that the stream cannot attain a higher use classification. This exemption does not apply to discharges that may cause impacts to downstream segments that are of higher quality;
- Receiving water meets Tier 1 waters criteria. Any permitted discharge must meet water quality standards;
- The permitted discharge will be authorized by a Section 404 Corps of Engineers Permit, will undergo a similar review process in the issuance of that permit, and will be issued a 401 certification by the department, indicating compliance with the state's antidegradation provisions; or
- Other: This permit authorizes temporary discharges. Any change in water quality will be temporary.

\*An antidegradation review is not required where the proposal is to maintain or improve the existing effluent levels and conditions. Proposals for increased effluent levels, in these categories of activities are subject to review.

**No further review required.**

**ANTIDEGRADATION REVIEW SUMMARY**

2. The outcome of the review is:
- A formal antidegradation review was not required for reasons stated in this worksheet. Any permitted discharge must ensure water quality standards will not be violated.
  - The review has determined that degradation of water quality should not be allowed. Any permitted discharge would have to meet effluent limits or conditions that would not result in any degradation estimated through appropriate modeling techniques based on ambient water quality in the receiving stream, or pursue an alternative to discharging to the waterbody.
  - The review has determined that the discharge will cause an insignificant change in water quality in the receiving stream. The appropriate agency may proceed with permit issuance with the appropriate conditions to ensure water quality standards are met.
  - The review has determined, with public input, that the permitted discharge is allowed to discharge effluent at concentrations determined through a total maximum daily load (TMDL). The TMDL will determine the appropriate effluent limits based on the upstream ambient water quality and the water quality standard(s) of the receiving stream.
  - The review has determined that the discharge is allowed. However, the full assimilative capacity of the receiving stream cannot be used in developing the permit effluent limits or conditions. In this case, a TMDL must be completed based on the upstream ambient water quality and the assimilative capacity allowed by the antidegradation review.
  - Other: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
3. Describe any other requirements to implement antidegradation or any special conditions That are required as a result of this antidegradation review: **This permit authorizes temporary discharges only. Any change in water quality will be temporary. Therefore no formal antidegradation review is necessary.**  
\_\_\_\_\_  
\_\_\_\_\_

Jill M. Riedel  
Reviewer

January 16, 2018  
Date

Albert Spangler, PE  
Team Leader

January 16, 2018  
Date