Westwood

STORMWATER POLLUTION PREVENTION PLAN

Triple H Wind Project

Hyde County, South Dakota

June 2019

Prepared For:

Wanzek Construction
2028 2nd Avenue NW
West Fargo, ND 58078

Stormwater Pollution Prevention Plan (SWPPP) Narrative

Trip H Wind Project

Hyde County, South Dakota

NPDES Permit Identification #: SDR10

Prepared for:

Wanzek Construction
2028 2nd Avenue NW
West Fargo, ND 58078

Prepared by:

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(952) 937-5150

Project Number: 0014440.00

June 2019

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ATTACHMENTS

1.0 INTRODUCTION AND PURPOSE

This SWPPP is prepared in accordance with the National Pollutant Discharge Elimination System (NPDES) regulations as established by the Clean Water Act and guided by the State of South Dakota. The South Dakota Department of Environment and Natural Resource's General Permit for Stormwater Discharges Associated with Construction Activity SDR100000 (Expired: March 31, 2023) provides the frame work of requirements for compliance to discharge stormwater from a construction site.

This SWPPP is for implementation by the Owner, as listed in Section 5.1 of this SWPPP, at the Triple H Wind Project, with the project location as defined in Section 4.0 of this SWPPP. This report shall be on the site at all times during construction.

The following are outlined in this site specific SWPPP:

- Control measures for stormwater pollution prevention during each phase of construction,
- Control measures for stormwater pollution prevention after construction,
- Sources of stormwater and non-stormwater pollution, and
- Inspection and maintenance procedures.

2.0 SWPPP CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Eli Bosco, TITLE	Date

3.0 SWPPP AMENDMENTS

This plan and the attachments must be amended to include additional requirements, or modified requirements, which take place during construction if one or more of the following occur.

1. There is a change in design, construction, operation, maintenance, weather, or seasonal conditions that significantly impacts the discharge of pollutants from the site to surface or groundwater.
2. Inspections or investigations by the site owner, Environmental Protection Agency, or South Dakota Department of Environment and Natural Resources officials indicate this plan is not effective in eliminating or significantly minimizing the discharge of pollutants.
3. This SWPPP is not achieving the general objectives of minimizing pollutants in stormwater discharges or if this plan is not consistent with the SDR100000 General Permit for Stormwater Discharges Associated with Construction Activities.
4. If the South Dakota Department of Environment and Natural Resources notifies the Owner (i.e. permittees) that additional requirements are needed, requirements are not being met for TMDL or other water quality standards, or that the SWPPP did not incorporate the necessary requirements.

3.1 SWPPP Amendment Log

The following table should be completed as necessary during construction to document changes and amendments to this document. Place the Amendment Number next to all application changes, redlines and information in the document to reference back to the changes summarized below. If an additional sheet is necessary attach the additional sheet to the SWPPP.

Table 1: Amendment Log

Amend #	Date	Reason, location and brief description of change or amendment	Requested by:	Prepared by:

3.2 SWPPP Amendment Certification

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Amendment #:_____

_____ _____ _____

Signature Printed Name and Title Date

Amendment #:_____

_____ _____ _____

Signature Printed Name and Title Date

Amendment #:_____

_____ _____ _____

Signature Printed Name and Title Date

Amendment #:_____

_____ _____ _____

Signature Printed Name and Title Date

Amendment #:_____

_____ _____ _____

Signature Printed Name and Title Date

4.0 SITE INFORMATION

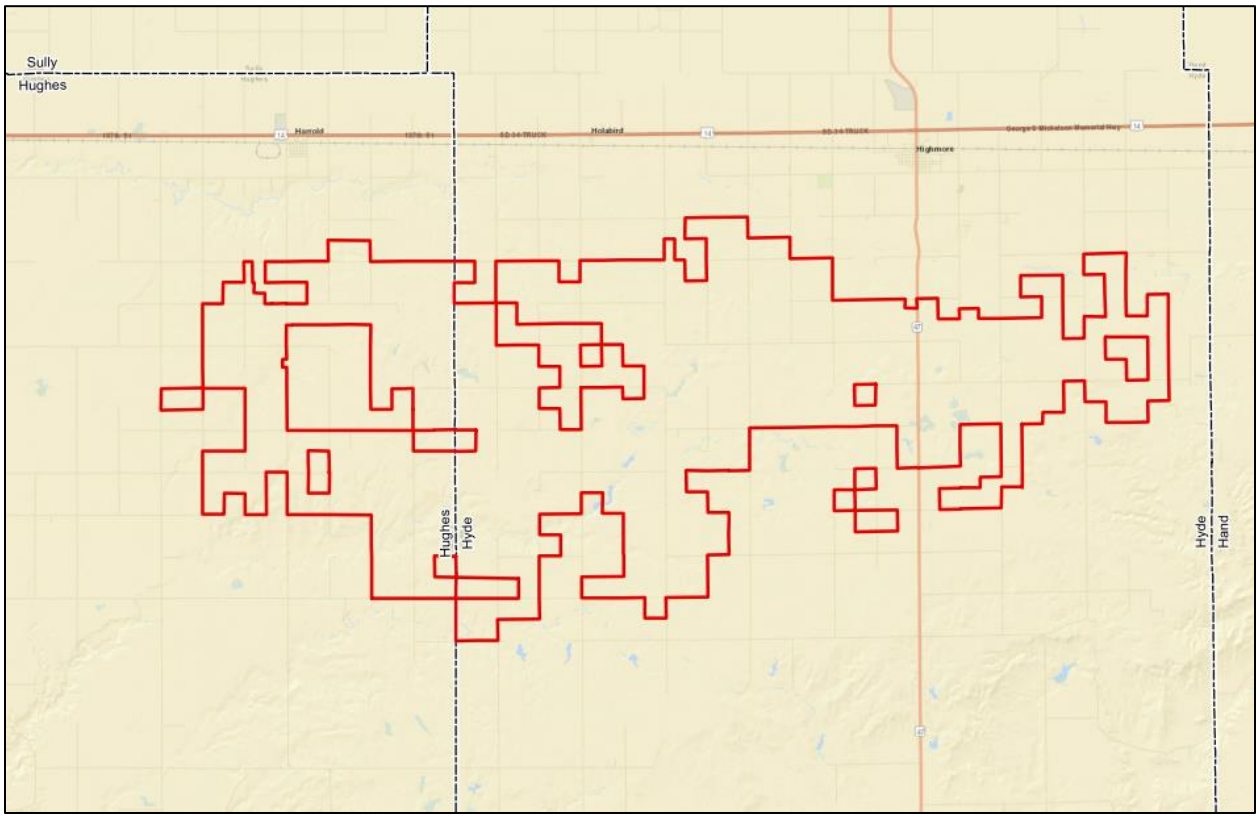
4.1 Site Location and Proximity Map

The Triple H Wind Project site is located in Hyde County, South Dakota, approximately 5 miles southwest of the nearest town of Highmore. The nearest intersection to the Laydown Yard is 202nd Street and 333rd Avenue. The site is bordered upon the north by 200th Street, upon the south by 209th Street, the west by 319th Avenue and the east by 343rd Avenue.

Table 2: Project Location

Section	Township	Range
25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36	112N	73W
31, 32, 33, 34, 35	112N	72W
1, 2, 10, 11, 12,13,14, 15, 16, 18, 20, 21, 22, 23	111N	73W
2, 3, 4, 5, 6, 7, 8, 9, 10, 11	111N	72W
Latitude and Longitude Points (Decimal)		
Latitude	44.438721	
Longitude	-99.564058	

Vicinity Map



4.2 Existing Conditions

The slope and terrain of the site generally consists of mostly flat agricultural and pastureland. The site currently has stormwater runoff flowing via overland flow and streams to the north and south. The site area ultimately discharges to the South Fork of Medicine Knoll Creek to the north and Chapelle Creek to the south.

4.2.1 Non-vegetative Cover

Prior to construction, non-vegetative cover at the site consisted of asphalt- and gravel-paved roads, some residences, and agriculture-related structures.

4.2.2 Vegetative Cover

Prior to construction, vegetative cover at the site consisted of grassland and crops, including corn, soybeans, sunflowers, wheat, and sorghum,

4.2.3 Land Use

Prior to construction the site area was primarily used for pastureland and agriculture. At the time that this SWPPP was prepared, a Phase I Environmental Site Assessment (ESA) was not available for the Project.

4.3 Soil Names and Types

Soils making up 1% or more of the Project area belong to Hydrologic Soil Groups (HSGs) B, C, D, and C/D. Soils in HSGs B, C, and D have moderately low, moderately high, and high runoff potentials when wet, respectively, and soils in HSG C/D have a moderately high runoff potential when drained and a high runoff potential when undrained. Comprehensive soil maps for the site are included in Attachment C. Source: https://websoilsurvey.nrcs.usda.gov/app/.

4.3.1 Soil Erosivity

Table 3: Soil K Factors and Erosivity Hazards

Soil Name / Type	K Factor	Erosivity Hazard				Reason(s) for Erosivity Rating
		Slight	Moderate	Severe	Very Severe	
Cavo-Demky silt loams, 0 to 2 percent slopes	0.37	X				Lack of slope
Cavo-Jerauld loams, 0 to 4 percent slopes	0.37	X				Lack of slope
Cavo-Stickney loams	0.32	X				Lack of slope
DeGrey-Walke silt loams, 0 to 2 percent slopes	0.37	X				Lack of slope
Eakin-Peno complex, 6 to 9 percent slopes	0.32	X				Lack of slope
Eakin-Raber complex, 0 to 2 percent slopes	0.32	X				Lack of slope
Eakin-Raber complex, 2 to 6 percent slopes	0.32	X				Lack of slope
Raber-Eakin complex, 6 to 9 percent slopes	0.28	X				Lack of slope
Highmore-DeGrey silt loams, 0 to 2 percent slopes	0.32	X				Lack of slope
Highmore-DeGrey silt loams, 2 to 6 percent slopes	0.32	X				Lack of slope

Highmore silt loam, 0 to 2 percent slopes	0.32	X				Lack of slope
Highmore silt loam, 2 to 6 percent slopes	0.32	X				Lack of slope
Highmore-Glenham silt loams, 2 to 5 percent slopes	0.32	X				Lack of slope
Hoven silt loam, 0 to 1 percent slopes	0.43	X				Lack of slope
Onita-Hoven silt loams	0.43	X				Lack of slope
Peno-Gettys clay loams, 9 to 15 percent slopes	0.20	X				Lack of slope
Plankinton silt loam	0.32	X				Lack of slope
Raber-Cavo loams, 0 to 2 percent slopes	0.28	X				Lack of slope
Raber-Cavo loams, 2 to 6 percent slopes	0.28	X				Lack of slope
Raber-Peno loams, 2 to 6 percent slopes	0.28	X				Lack of slope
Raber-Peno loams, 6 to 9 percent slopes	0.28	X				Lack of slope

4.3.2 Soil Particle Size

Table 4: Soil Particle Sizes

Soil Type	% Sand	% Silt	% Clay	% Site Area
Cavo-Demky silt loams, 0 to 2 percent slopes	24.6	52.4	23.0	1.1
Cavo-Jerauld loams, 0 to 4 percent slopes	39.5	37.5	23.0	2.0
Cavo-Stickney loams	39.5	37.5	23.0	1.0
DeGrey-Walke silt loams, 0 to 2 percent slopes	10.0	68.0	22.0	7.3
Eakin-Peno complex, 6 to 9 percent slopes	9.5	67.5	23.0	4.4
Eakin-Raber complex, 0 to 2 percent slopes	10.0	68.0	22.0	2.1
Eakin-Raber complex, 2 to 6 percent slopes	10.0	68.0	22.0	17.8
Raber-Eakin complex, 6 to 9 percent slopes	38.0	40.0	22.0	2.1
Highmore-DeGrey silt loams, 0 to 2 percent slopes	10.0	68.0	22.0	13.1
Highmore-DeGrey silt loams, 2 to 6 percent slopes	10.0	68.0	22.0	5.5
Highmore silt loam, 0 to 2 percent slopes	10.0	68.0	22.0	4.0
Highmore silt loam, 2 to 6 percent slopes	10.0	68.0	22.0	2.0

Highmore-Glenham silt loams, 2 to 5 percent slopes	9.5	67.5	23.0	1.2
Hoven silt loam, 0 to 1 percent slopes	13.0	63.0	24.0	1.0
Onita-Hoven silt loams	24.2	51.8	24.0	1.4
Peno-Gettys clay loams, 9 to 15 percent slopes	38.0	30.0	32.0	2.6
Plankinton silt loam	26.3	52.7	21.0	1.0
Raber-Cavo loams, 0 to 2 percent slopes	38.0	40.0	22.0	2.8
Raber-Cavo loams, 2 to 6 percent slopes	38.0	40.0	22.0	9.5
Raber-Peno loams, 2 to 6 percent slopes	38.0	40.0	22.0	1.4
Raber-Peno loams, 6 to 9 percent slopes	38.0	40.0	22.0	4.8

5.0 PROJECT INFORMATION

5.1 Owner and Information

Owner Information	Operator Information
Company Name	Wanzek Construction
Eli Bosco	Chad Eken
Address	2028 2nd Avenue NW, West Fargo, ND 58078
Contact Number and email	701-212-5731, ceken@wanzek.com

The owner responsibilities include:

- Developing a SWPPP prior to submitting the Notice of Intent (NOI);
- Submitting a complete and accurate NOI;
- Complying with all terms and conditions of the General Permit for Stormwater Discharges Associated with Construction Activities;
- Keeping the permit up to date (partial, whole, contractor, builders, etc.);
- Submitting the Notice of Termination (NOT) within thirty days of meeting requirement of final stabilization;
- Identifying who has long term operation and maintenance responsibility of the permanent stormwater controls;
- Developing a chain of responsibility with the operators to ensure NPDES and SWPPP compliance;
- Identifying trained personnel to oversee the SWPPP and conduct inspections;
- Identifying trained personnel to develop a SWPPP; and
- Identifying trained personnel to install and maintain best management practices.

5.2 Project Type and Proposed Conditions

5.2.1 Non-vegetative Cover

Following construction, new non-vegetative cover will consist of turbine pads, the substation, the operations & maintenance (O&M) facility, and access roads.

5.2.2 Vegetative Cover

Following construction, temporarily disturbed areas will be reseeded to match pre-existing vegetative cover, subject to landowner approval. Please refer to Section 9.3 for additional information.

5.2.3 Land Use

Following construction, the site will be used as a wind energy facility. Other existing land uses will remain unchanged.

5.3 Pre and Post Project Estimates

Table 5: Project Area Estimates

Project Area	Disturbed Area	Existing Impervious Area	Post Construction Impervious Area
2,954 Acres	1,034 Acres	8.9 Acres	100.3 Acres

5.4 Construction Activity Description

Construction activity will include installation of up to 92 wind turbines. Construction of the wind turbines requires, but is not limited to, the installation of a substation, an O&M building, a temporary laydown yard, underground electrical collection, and 16-foot wide gravel access roads with temporary thirty-six foot wide disturbance due to temporary compacted shoulders (10 feet on each side) for truck transport of materials and crane walking paths. Minor construction activity will be necessary for some existing road and radii. The crane paths are specifically designed to follow access roads to limit disturbance of streams and other sensitive areas such as steep slopes and will be approximately 36 feet wide where located away from access roads. All temporary crane paths should be restored to preconstruction conditions after the use of the paths. The SWPPP shall be amended to show locations and disturbance areas as necessary should locations change during construction.

NOTE: All sensitive areas shall be marked prior to start of earth disturbance activities. If any subsurface and/or surface drainage features are altered during construction, restore to pre-construction conditions and drainage patterns. Coordinate the work with the Landowner.

1. Access road construction activity and phasing should include:
   a. Redistributing topsoil along one or both sides of the road in a linear fashion;
   b. Temporarily stabilizing ditches (such as erosion control blanket) and applying perimeter sediment controls within the timeframes of the Construction General Permit (CGP);
   c. Compacting subgrade;
   d. Applying gravel base;
   e. Decompacting soils following turbine erection;
   f. Applying topsoil for non-aggregate areas during final grade;
   g. Applying final gravel cap to road;
   h. Maintaining pre-construction drainage patterns and runoff;
   i. Restoring any subsurface and/or surface drainage features to pre-construction conditions and drainage patterns if altered during construction; and
   j. Returning disturbed areas not part of the final road to pre-construction conditions.

2. Turning radius and temporary intersections construction activity and phasing should include:
   a. Stripping and stockpiling topsoil;
   b. Applying seed and erosion control blanket, turf reinforcement mat, mulch cover or similar methods for restoration to pre-construction conditions;
   c. Installing culverts as necessary and according to the plan for the accesses;
   d. Filling with native material to grade;
   e. Applying gravel base;
   f. Removing turning radius (removing gravel and fill soils) following turbine component delivery or turbine erection;
   g. Removing any extra culvert lengths; and
   h. Reapplying topsoil and final grade.

3. Turbine area construction activity and phasing should include:
   a. Stripping and segregating topsoil and applying topsoil in a soil berm along with tracking and seeding around the downgrade perimeter of the turbine pad area;
   b. Installing silt fence at the perimeter as necessary and as shown on the plans;
   c. Excavating areas required for the foundation and stockpiling the subsoils;
   d. Dewatering accumulated groundwater or stormwater via pump as necessary and ensuring discharged water does not contribute sedimentation to receiving waters;
   e. Providing temporary stabilization measures (such as mulch, erosion control blanket, and turf reinforcement mat);
   f. Temporarily covering the stockpiles with hydromulch or other temporary cover BMP for water and wind erosion protection;
   g. Constructing concrete washout area or using a common concrete washout during concrete work for mud mat and foundation construction;
   h. Grading crane pad for turbine erection;
   i. Erecting the turbine;
   j. Backfilling subsoils and topsoil with a rough grade; and
   k. Returning disturbed areas not part of the final road to pre-construction conditions.

4. Temporary crane path construction activity and phasing should include:
   a. Planning crane walks according to unique area conditions where crane walks will occur;
   b. Installing downgrade perimeter controls, such as fiber logs or silt fence, to protect conveyances as field conditions dictate;
   c. Walking cranes across waterways/conveyances during dry conditions when possible;
   d. Providing timber mat crossings for grass waterway crossings, swale crossings, and other gradual conveyance crossings;
   e. Providing temporary creek/waterway crossing BMPs according to details shown on plans and explained in this SWPPP narrative; and
   f. Restoring all disturbed areas to pre-construction conditions following crane walk activity by tilling to agricultural condition or applying necessary mulch/erosion control blanket and seeding to areas for restoration to pre-construction condition.

5. Electrical underground construction activity and phasing should include:
   a. Open trenching or plowing collection line across fields, repairing or restoring any drain tile encountered;
   b. Segregating topsoil from subsoils unless otherwise agreed upon by the landowner;
   c. Dewatering accumulated groundwater or stormwater via pump (if necessary) and dewatering bag, ensuring discharged water does not contribute sedimentation to receiving waters;
   d. Using perimeter control, such as logs, silt fence, or rock checks, if open trenching or plowing through a waterway or conveyance; and
   e. Applying seed with erosion control blanket or mulch to restore grass waterway to pre-construction conditions.

6. Laydown yard construction activity and phasing should include:
   a. Providing stable accesses to area and installing culverts according to the plans;
   b. Installing silt fence and other sediment controls as necessary and as detailed in the plans;
   c. Stripping and stockpiling topsoil around the up-gradient perimeter of the laydown yard for a diversion of water or downgrade perimeter of the yard for runoff control;
   d. Applying rock base to designed thickness;

e. Temporarily covering the stockpiles with hydromulch or weed-free straw/hay after seeding with temporary seed mix;
f. Providing necessary secondary containment, secure storage, and maintenance activities during operation;
g. Removing rock and decompacting and reapplying topsoil to the area after the laydown yard is no longer needed; and
h. Returning disturbed areas to pre-construction conditions, which may include applying seed and mulch cover for restoration.

7. Collector substation construction activity and phasing should include:
   a. Providing stable accesses to area and installing culverts according to the plans;
   b. Installing silt fence and other sediment controls as necessary and as detailed in the plans;
   c. Stripping and stockpiling topsoil around the up-gradient perimeter for a diversion of water or downgrade perimeter of the substation for runoff control;
   d. Applying rock base to designed thickness;
   e. Temporarily covering the stockpiles with hydromulch or weed-free straw/hay after seeding with temporary seed mix;
   f. Constructing a concrete washout area prior to starting concrete work;
   g. Constructing electrical components and fencing; and
   h. Returning disturbed areas not part of the final gravel pad to agricultural conditions or applying seed and mulch cover for restoration to pre-construction conditions.

8. Operation and maintenance facility construction activity and phasing should include:
   a. Providing stable accesses to area and installing culverts according to the plans;
   b. Installing silt fence and other sediment controls as necessary and as detailed in the plans;
   c. Stripping and stockpiling topsoil around the up-gradient perimeter for a diversion of water or downgrade perimeter of the area for runoff control;
   d. Temporarily covering the stockpiles with hydromulch or weed-free straw/hay after seeding with temporary seed mix;
   e. Constructing a concrete washout area prior to starting concrete work;
   f. Completing concrete work and building construction;
   g. Applying rock base to designed thickness;
   h. Applying rock base for parking areas as designed; and
   i. Providing seed with mulch or erosion control blanket following final grade.

5.5 Project Activity Schedule

Table 6: Project Schedule

Activity	Start Date	End Date
Overall Project	8/1/2019	
Access Roads		
Laydown Yard / Batch Plant		
Crane Paths / Turbine Blade Assembly		
Excavations / Foundations		

O&M Building		
Substation		
Underground Collection		

5.6 Project Phasing

Erosion/sedimentation control Best Management Practices (BMPs) will be installed prior to or concurrent with grading activity. BMPs will be installed and maintained throughout the project as needed. After grading, installation of access roads and the switchyard aggregate surface will occur. Safety and site cleanliness will be emphasized through entirety of project while site cleanup and restoration of disturbances will be ensured once construction is complete.

5.7 Project Contacts and Chain of Responsibility

Table 7: Project Contacts

Company*	Name or Position	Responsibility	Contact Number
		Site Development	
		Dirt Work / Grading / Turbine / Cranes / Excavation	
		Underground Electrical	
		Overhead Electrical	
		Switchyard	
		Substation	
		O&M Building	
		Laydown / Batch Plant	
		Project Environmental Contact	
		Routine SWPPP Inspections	
Westwood Professional Services	Aaron Mlynek, CPESC	SWPPP development	952-697-5710
		Restoration	
		BMP installation	
		BMP Maintenance	

6.0 ADDITIONAL SITE OR PROJECT CONSIDERATIONS

6.1 Chemical Treatments

At the time of SWPPP completion the use of chemical additives or polymers for purposes of sediment flocculation are not anticipated for this project. Should chemical treatment become necessary based upon inspection results, weather conditions or construction means and methods the table below must be updated to reflect the chemical used. **IMPORTANT: Prior approval from the SDDENR is necessary for any chemical additive for discharging stormwater.**

Table 8: Flocculation Plan Summary

Flocculation Chemical	Application Location	Primary Soil Types	Settling BMPs Used	Application Method	Receiving Water	Mfr Dosing Rate

6.2 Environmental Review Document

At the time of SWPPP completion, there are no known environmental review documents which apply to this project.

7.0 RECEIVING WATERS

The table below summarizes the immediate receiving waters from the site. Where necessary the receiving waters has been designated immediate (for the first surface water receiving drainage from the site) and ultimate (for the surface water receiving runoff from site after the immediate receiving waters). The receiving waters listed are located within a mile, and receive water from the site discharge location(s).

Generally, the southern half of the site drains to tributaries of Chapelle Creek, which runs through the southern portion of the site. Drainage basins tributary to Chapelle Creek include Headwaters Elm Creek (southeast corner), Headwaters of Chapelle Creek (south central portion), and Upper South Chapelle Creek, Gustafsons Dam, and Wilbur Russel Dam (southwestern corner). The northern half of the site drains to tributaries of South Fork Medicine Knoll Creek, which runs approximately 1.5 miles north of the northern site boundary. Drainage basins tributary to the Creek include Outlet South Fork Medicine Knoll Creek (northwest corner), Woodruff Lake (northwestern portion of the site), WJ Amussen Dam (north central portion of the site), and Headwaters South Fork Medicine Knoll Creek (northeastern portion of the site). Refer to Attachment D for drainage maps.

Table 9: Receiving Waters

Name of Waterbody	Immediate (I) or Ultimate (U)	Type (wetland, lake, stream, ditch)	Impaired? Y/N	MS4? Y/N
Outlet South Fork Medicine Knoll Creek	U	Stream	N	N
Woodruff Lake – South Fork Medicine Knoll Creek	U	Stream	N	N
WH Amussen Dam – South Fork Medicine Knoll Creek	U	Stream	N	N
Headwaters South Fork Medicine Knoll Creek	I	Stream	N	N
Headwaters Elm Creek	I	Stream	N	N
Peano Lake Dam	U	Stream	N	N
Headwaters Chapelle Creek	I	Stream	N	N
Upper South Chapelle Creek	U	Stream	N	N
Gustafsons Dam – Chapelle Creek	U	Stream	N	N
Wilbur Russell Dam – Chapelle Creek	U	Stream	N	N

7.1 Impaired Waters

There are no impaired waterbodies which receiving stormwater discharge within one mile of the site disturbed area according to the Construction Stormwater Impaired Water Search, South Dakota Department of Environment and Natural Resources website: http://denr.sd.gov/dfta/wp/tmdl.aspx (accessed 06/12/2019) and the 2018 South Dakota Integrated Report for Surface Water Quality Assessment website: https://denr.sd.gov/documents/18irfinal.pdf.

8.0 STORMWATER MANAGEMENT

8.1 Temporary Practices

There are no anticipated temporary stormwater management practices at the time of SWPPP completion. Grading of the substation will be phased so that 10 acres or more are not disturbed at a single time. Permanent aggregate surface or other concrete foundations will be installed to stabilize exposed areas.

8.1.1 Calculations

Calculations are not applicable to this project as there are no temporary stormwater management practices requiring calculations.

Table 10: Temporary Sediment Basin Calculations

Basin #	Storm Frequency	Rainfall Amount	Runoff Area	Runoff Volume	Capacity Needed
1	2 yr. / 24 hr.	2.24”	Acres	ac ft.	ac ft.
2	2 yr. / 24 hr.	2.24”	Acres	ac ft.	ac ft.
3	2 yr. / 24 hr.	2.24”	Acres	ac ft.	ac ft.

8.2 Permanent Practices

There are no permanent stormwater practices anticipated for this project activity.

8.2.1 Calculations

Calculations are not applicable to this project as there are no permanent stormwater management practices requiring calculations.

9.0 TEMPORARY BEST MANAGEMENT PRACTICES

9.1 Soil Management

After clearing and grubbing, the grading contractor will strip and stockpile topsoil material for reapplication on all future permanent pervious surface areas. During development, grading and utility construction the subsoils will be compacted as necessary for construction using typical excavation techniques. During final grade, reapplication of 4 to six inches of topsoil will be done by a wide-pad dozer and other equipment to minimize compaction of the topsoil material.

9.2 Natural Buffers and No-disturbance Areas

Natural Buffers

An undisturbed fifty-foot buffer zone will be preserved for all state waters (where natural buffers exist). The use of linear sediment controls will be installed upgradient to provide sediment control and delineate the fifty foot buffer. Refer to the site erosion and sediment control plans for the location of the buffer. The following activities are prohibited to take place within the buffer area:

- Placing stockpiles ;
- Disturbing vegetation;
- Placing construction material; and
- Storing gas, oils, or other potentially polluting material.

No-disturbance Areas

No-disturbance areas include the on-site wetlands and areas existing overhead power lines. Please see the plan set in Attachment E for locations of these features.

9.3 Erosion Prevention Practices

The following controls are anticipated to minimize soil loss from the construction site area. The controls should help to minimize soil from being transported from water and wind as well as aide in establishment of temporary and permanent vegetation. Prior to grading and during clearing and grubbing, the areas of vegetation preservation, buffers and other areas of no-disturbance should be flagged, staked or otherwise delineated.

Timing for disturbed areas and slopes

Temporary erosion prevention practices should be initiated immediately after construction activity disturbing soil in an area is temporarily or permanently ceased for a period of 14 days. The application of temporary erosion control management practices should be completed prior to the fourteenth day of temporarily or permanently ceasing construction activity in an area of the project.

Stockpile Management

- Locate the stockpiles and debris outside of any natural buffers established and away from any stormwater conveyances, drain inlets, and areas where stormwater flow is concentrated;
- Protect the stockpile debris from contact with stormwater run-on by using temporary sediment controls, berms, or other best management practices;
- Properly maintain and position stockpiles to minimize dust generation and wind transport of sediment; and
- Minimize stormwater runoff from the piles by properly positioning stockpiles and debris or installing effective sediment controls.
- Operators shall not place stockpiles in surface waters of the state.

Table 11: Erosion Controls

Potential BMPs	Construction Phase or Activity							Application Notes	
	Access Roads	Laydown Yard	Crane Paths / Blade Assembly	Excavations / Foundations	O&M Building	Substation	UG Collection		
Construction Phasing	X	X	X	X	X	X	X	Minimize soil disturbance, as feasible, per phase. Stake/flag areas that are to be left undisturbed.	
Buffer Strips	X		X	X			X	See Section 8.2 for more information.	
Surface Roughening	X	X		X	X	X	X	Use tracked equipment perpendicular to contour on steep slopes for temp/short term erosion control.	
Straw / Hay Mulch	X	X	X	X	X	X	X	Apply at two tons/acre. Disc anchor to soil. Weed Free mulch should be used.	
Dust Control	X	X	X	X	X	X	X	Contractor to apply water or dust palliatives.	
Erosion Control Blanket	X	X	X	X	X	X	X	Straw or wood fiber, double-sided netting blanket should be installed per manufacturer's recommendations.	
Hydroseed	X	X	X	X	X	X	X	Apply at a minimum of 1,800 pounds per acre from two directions to prevent shadowing. Could use in lieu of mulch.	
Temporary Seed Mix	X	X	X	X	X	X	X	Application Rate = See mix.	Prepare soil prior to seeding. Broadcast and rake seed into soil prior to mulch or blanket.
Permanent Seed Mix	X	X	X	X	X	X	X	Application Rate = See mix.	

T= Temporary BMPs which will be removed following construction completion and final stabilization.

P= Permanent BMPs which will provide vegetative/non-vegetative stabilization or will not be removed following completion of construction.

Potential Seed Mix

South Dakota Department of Transportation Type B Permanent Seed Mixture:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Western Wheatgrass	Arriba, Flintlock, Rodan, Rosana, Walsh	7
Switchgrass	Dacotah, Forestburg, Nebraska 28, Pathfinder, Summer, Sunburst, Trailblazer	3
Indiangrass	Holt, Tomahawk, Chief, Nebraska 54	3
Big Bluestem	Bison, Bonilla, Champ, Sunnyview, Rountree, Bonanza	3
Canada Wildrye	Mandan	2
	Total:	18

9.4 Sediment Control Practices

The following controls are anticipated to minimize sediment discharge, capture sediment in suspension and minimize sedimentation off site.

Table 12: Sediment Controls

Potential BMPs	Construction Phase or Activity							Application Notes
	Access Roads	Laydown Yard	Crane Paths / Blade Assembly	Excavations / Foundations	O&M Building	Substation	UG Collection	
Silt fence	X	X	X	X	X	X		Machine sliced install with wood posts at six foot spacing. Install perimeter silt fence prior to grading
Fiber rolls	X	X	X	X	X	X		Install on contour, minimum of six inch roll, wood or straw fiber. Trench in approximately 2 inches and secure with two inch posts every two feet on center.
Soil berm				X				Side slopes of 3:1 with at least one foot height. Use temporary erosion control to stabilize berm.

T= Temporary BMPs which will be removed following construction completion and final stabilization.
P= Permanent BMPs which will provide vegetative/non-vegetative stabilization or will not be removed following completion of construction.

9.5 Run-on and Runoff Controls

The following controls are anticipated to minimize scour, transport water across or down steep slopes or critical areas, divert clean water, and / or provide temporary conveyances to maintain drainage.

Table 13: Run-on and Runoff Controls

Potential BMPs	Construction Phase or Activity							Application Notes
	Access Roads	Laydown Yard	Crane Paths / Blade Assembly	Excavations / Foundations	O&M Building	Substation	UG Collection	
Riprap Apron / Energy Dissipation	X	X			X	X		See detail in plans. Install within twenty-four hours of connection to surface waters.
Culvert Protection	X	X	X		X	X		See details in plan set. Install within twenty-four hours of installation of culverts.
Gravel Bag Berm	X		X					See detail in plans.
Low Water Crossing	X		X					See detail in plans.

T= Temporary BMPs which will be removed following construction completion and final stabilization.
P= Permanent BMPs which will provide vegetative/non-vegetative stabilization or will not be removed following completion of construction.

9.6 Tracking Controls

The following controls are anticipated to minimize or prevent sediment track-out from construction site exits to paved surfaces or to retrieve material tracked onto paved surfaces to minimize or prevent the material from being washed into surface waters or stormwater inlets.

Table 14: Tracking Controls

Potential BMPs	Construction Phase or Activity							Application Notes
	Access Roads	Laydown Yard	Crane Paths / Blade Assembly	Excavations / Foundations	O&M Building	Substation	UG Collection	
Rock Pad	X	X			X	X		See detail in plans. Install at all site exits prior to grading. Maintain for duration of project.
Gravel or Aggregate Road Base	X	X			X	X		See detail and notes in plans.
Street Scraping	X	X			X	X		Scrape large clumps/amounts of material with soft tracked or wheeled equipment prior to sweeping.
Street Sweeping	X	X			X	X		Sweep paved surfaces within twenty-four hours of discovery.

T= Temporary BMPs which will be removed following construction completion and final stabilization.

P= Permanent BMPs which will provide vegetative/non-vegetative stabilization or will not be removed following completion of construction.

9.7 Dewatering and Basin Draining Practices

Dewatering Accumulated Water (via pump, trench, temporary ditch or grade cuts)

Dewatering of turbid water (water that is visibly cloudy or brown in color) should be discharged via pump and hose or overland flow to a temporary sediment basin for pretreatment. The use of riprap apron (energy dissipation) should be used for the discharge location. If riprap is not used, an alternative form of energy dissipation should be used to prevent scour and re-suspension of soil at the discharge point of the hose. If discharge to a temporary sediment basin is not feasible, the use of dewatering dumpsters, dewatering bags or other prefabricated product should be used. The use of rock checks, erosion control blanket and sumps or traps may be considered for overland flow. After the use of BMPs, the water could be discharged through a vegetated buffer and energy dissipation. The discharge of water from the site should be visibly clear in appearance.

The discharge of accumulated water should not:

- Contain oil, grease, a sheen, odor, or concrete washout;
- Adversely impact adjacent properties with water or sediment;
- Adversely impact waters of the state;
- Cause erosion of slopes and channels;
- Cause nuisance conditions; or
- Contribute to inundation of wetlands which negatively impact the wetlands.

NOTE: the permittee may be required to obtain a Temporary Water Right. Contact the SDDENR at 605-773-3351 for more information. It is the operator and permittee responsibility to obtain necessary water rights.

9.8 Sampling Requirements

If the discharge observed contains suspended solids the following must be implemented:

- Installation of additional best management practices and update this SWPPP.
- Sample the dewatering discharge for total suspended solids on a daily basis until there is no longer a discharge of visible solids.
- Samples must be analyzed in accordance with 40 CFR, Part 136 which may require sending the samples to an off-site laboratory for analysis.
- If the sample results exceed 53 mg/L in any sample or measurement you must cease the dewatering discharge to surface waters of the state until the operator can demonstrate additional best management practices are sufficient to eliminate visible pollutants.
- Document sampling and results or any updates in this SWPPP.

10.0 POLLUTION PREVENTION MANAGEMENT

10.1 Storage, Handling and Disposal of Construction Materials

Storage and Handling

- All products shall be kept in their original container, with original labels still attached, unless the container is not re-sealable.
- Storage of all diesel fuel, oil, hydraulic fluids, other petroleum products and other chemical and products must be within water-tight containers.
- Hazardous materials shall be returned to the hazardous material storage area at the end of each day and be contained within sealed containers and provide secondary containment as applicable. .
- An effort should be made to store only enough products to do the required job.
- The contractor shall provide tanks or barrels to collect liquid byproducts that pose a pollution hazard.
- The pollutants shall be removed from the site on a weekly basis and disposed of in accordance with federal, state and local regulations.
- All spills shall be cleaned up immediately after discovery, in accordance with the manufacture's recommended methods.
- Hazardous materials shall be properly stored to prevent vandalism or unauthorized access.
- Containment units shall be installed in accordance with federal, state, and local regulations.
- No hazardous material shall be stored within 200 feet of an identified critical area.
- If building materials, chemicals, or general refuse is being used, stored, disposed of, or otherwise managed inappropriately, the contractor shall correct such defects within twenty-four hours of detection or notification.

Disposal (Dumpsters)

- Locate dumpsters away from watercourses, streams, creeks and other surface waters or conveyances.
- Site inspector shall regularly observe for and report excess litter and solid waste and request pickup and retrieval of wastes.
- Wastes, litter, debris shall be deposited into dumpsters in a central location and / or in various satellite locations where work is active.
- Dumpsters should be supplied by and regularly maintained, emptied and removed by a waste management company.

10.2 Fueling and Maintenance of Equipment and Vehicles; Spill Response

- Routine maintenance of vehicles may occur in staging areas only if necessary.
- Avoid maintaining equipment and vehicles on site, and perform maintenance off site where feasible.
- If fueling is done by mobile tank and dispenser, provide close supervision for the transfer of fuel, use drip pans, and make spill containment and cleanup materials readily available.
- If fueling is done via temporary tank, store the tank within a bermed, area and away from surface waters.
- Make Spill Kits with absorbent materials available on site for use in cleaning up small spills.
- In the event of a spill or discharge of hazardous material of reportable quantity, contact the South Dakota Notification Center (605-773-3296), the South Dakota After Hours Center (605-773-3231), If the hazardous condition involves the release of an EPA regulated material or an oil as defined by the EPA, the release may also need to be reported to the National Response Center. Federal Reporting is required within 15 minutes of event occurrence or discovery. Contact the National Response Center at (800) 424-8802. The NRC is staffed twenty-four hours a day. For more information reference the following website: https://www.epa.gov/emergency-response/when-are-you-required-report-oil-spill-and-hazardous-substance-release.

Table 15: Reportable Spill Quantities

Material	Reportable Spill Quantities
Petroleum Material	25 Gallons
PCB Oil	1 Pound
Other Material	Quantity that causes odor, color, sheen, foam, or other obvious indicator of pollutants.

10.3 Vehicle and Equipment Washing

If necessary, the contractor shall develop a designated wash area with basin containment to prevent the untreated water from discharging from the site to surface waters. BMPs include, temporary basins, inspecting the vehicles and equipment for leaks prior to washing, and prohibiting washing activity until discovered leaks are repaired and maintenance is completed of the equipment or vehicle. The area shall be identified on the site plan. Contain the water, and pump from the site into a truck for proper disposal at a waste water facility. No engine degreasing may be done on site.

10.4 Concrete Washout and Other Washout

Mobile Concrete or Mortar Mixers

Implement the following BMPs with the use of mortar or concrete mixers.

- Store bags of concrete and mortar in dry storage.
- Position mixers a minimum of 100 feet from the nearest watercourse or conveyance.
- If mixers must be positioned closer than 100 feet from a conveyance, install a temporary berm to prevent runoff from the mixer from flowing into the conveyance.
- Use Tarpaulins or plastic sheeting as a liner to prevent concrete or mortar from contacting the soil.
- Use buckets to contain washout /rinse water when cleaning the mobile mixer.
- Dump buckets of washout water in a designated concrete washout area.

Concrete Washout

Implement the following BMPs implemented for concrete washout areas.

- Contain washout water from the tools, equipment, and the chutes of concrete trucks, mobile mixers, or other containers with concrete material, and do not allow it to be discharged into waters of the state or drain onto adjacent properties.
- Define the washout area with signage notifying the contactors of the location and use.
- The washout area should be a sufficient size to contain the expected washout material. 10'x10'x3' area should suffice for most activities. Additionally: the washout area shall have a sign demarking the area as a washout.
- Multiple washout areas may be needed. Locations of the washouts should be shown on the construction plans by the contractor.
- When identifying the location of the concrete washout areas, include the date of install, date of last maintenance, and date of removal.
- Use thick poly sheeting to prevent contamination of the soil, and prevent infiltration of the washout material.

Once the material is hardened it can be disposed of in a dumpster. If the material is liquid or not hardened, vacuum the material up, haul it off site to properly disposed of or recycle at an approved facility. Some sites will not need the separate washout area if a truck chute washout is available from the concrete supplier.

Truck Chute Washout

Where available, all trucks with self-contained washout and water recycle systems must be used for every truck chute, tool, and equipment rinse and washout. Position the truck in a flat area, away from inlets and surface waters where feasible.

10.5 Portable Sanitary Facilities

- Locate facilities away from watercourses, streams, creeks, and other surface waters or conveyances.
- Place facilities upgradient of perimeter sediment controls, and not on paved or other impervious surfaces.
- Secure facilities to the soil with stakes or tether to other non-movable structure to prevent tipping from wind or other factors.
- Schedule routine and regular cleanout and maintenance of facility from a reliable company.

11.0 INSPECTION AND MAINTENANCE

Construction activity and all support activities must be inspected (using the inspection form found in Attachment F or an alternative form) within the parameters of the schedule below. The inspector shall be a person trained and familiar with the requirements of this SWPPP and the SDR100000 Permit. This person is delegated by the owner.

Scope of inspections* should include:

- Date and time of inspections;
- Inspector's name;
- Findings of the inspection;
- Locations of corrective actions needed;
- Corrective actions taken (date/time/ who);
- Date and amount of rainfall**
- Observed discharges Locations;
- Description of discharges with color, odor, floating, settled, solids, foam, or oil sheen;
- Photographs of discharges
-

Amendments from inspections need to be completed within seven days (see SWPPP section 3.1).

*All inspections should be documented within twenty-four hours after completing the field inspection, and available in paper or electronic form on site.

**Rainfall amounts should be taken from an onsite rain gauge. If a rain gauge is not feasible, the rain fall data should be observed from the following website:

https://forecast.weather.gov/MapClick.php?lat=44.519810000000064&lon=-99.44158999999996#.XQJ0DFxKhaQ

11.1 Inspection Schedule

Table 16: Inspection Schedule

If the site is:	Then an inspection is needed:	Notes and Information
Active	☐ Once every fourteen calendar days and within twenty-four hours of a rainfall ≥ 0.25", OR ☒ Once every seven calendar days	A rain gauge should be used or rain data should be taken from the link listed above.
Partial final stabilization	Once every month	Allowed in areas where work is completed and vegetation is established. Other/active areas must follow above.
Subject to Winter/Frozen Conditions	Once every month	Disturbed areas of the site have been temporarily or permanently stabilized. Resuming "active" inspection frequency is required no later than March 1st of each year.

11.2 Maintenance Schedule

Table 17: Maintenance Schedule

BMP	Observed Condition for Maintenance	Maintenance Interval
All non-functional BMPs	Sediment overtopping, under water, scoured ends, undermined, destroyed, non- functional as designed, etc.	Maintenance must be done by the end of the next work day or if the BMP requires replacement: it should be done within seven calendar days or prior to forecast rainfall, whichever is sooner. If sediment escapes the construction site: begin removing the offsite accumulations by the end of the same work day.
Vegetative Buffer	Silt covered, rill erosion observed or otherwise ineffective	Repair by the end of the next working day.
Stabilized Areas (temporary or permanently)	Rill erosion, gulley erosion is observed. Mulch washed away or erosion control blanket is undermined.	Repair and stabilize eroded areas and non-functional stabilization BMPs by the end of the same work day.
Perimeter Sediment Control (silt fence, fiber logs, berms, etc.)	½ full of sediment, flattened to ½ height, driven over, undermined, scoured, moved for access etc.	Maintenance of the BMP: by the end of the next work day or if replacement is required: complete replacement within seven days of discovery or notice or prior to forecast rainfall, whichever is soonest.
Inlet protection BMPs, conveyances, surface waters	Sediment deposition, sediment deltas and accumulation of sediment material.	Removal/cleanout of accumulated sediment and deltas to be removed within seven days. Stabilize as needed if soils are exposed during removal/cleanout.
Temp sed basins and traps; permanent sediment basins	Sediment deposition and accumulation to ½ of the storage volume.	Cleanout, remove accumulated sediment material within seven calendar days or prior to forecast rainfall, whichever is sooner.
Site exit locations, rock exit pads, other anti-tracking practices	Accumulated sediment in rock or other anti-tracking BMP, tracking of sediment from the site onto paved surfaces	Top dress rock, maintain rock exit or other anti-tracking controls, scrap paved surfaces, sweep paved surfaces by the end of the same work day.
Paved surfaces; adjacent streets	Tracked sediment and soil material from the site hauling or access	Sweep within the same work day of discovery; additional and/or more frequent sweeping may be needed to maintain public safety or prevent washing from forecast rains.

12.0 FINAL STABLIZATION

Final stabilization is achieved for the project when permanent erosion control BMPs are applied to the site. The permanent erosion control BMPs may be a combination of vegetative and no vegetative cover types. Additional requirements to achieving final stabilization include:

- All soil disturbing activity is complete;
- Permanent stormwater treatment system (if required) is constructed and accumulated sediment from construction activity has been removed;
- All temporary, synthetic BMPs have been removed from the site;
- In agricultural areas (as applicable), the construction activity area has been restored to the pre-construction agricultural use; and
- The vegetative cover for the site is at a density, with a uniform perennial cover of 70 percent of the expected final growth density.

12.1 Vegetative Cover / Permanent Erosion Control

The planned permanent erosion control vegetative cover BMPs for this site include agricultural land use and vegetative cover crops. Areas not returned to agricultural conditions of covered by a non-vegetative cover will be restored with grass cover through seeding. Minimization of the presence of invasive species is required. The following seven weeds are declared to be noxious in South Dakota: Canada thistle, hoary cress, leafy spurge, perennial sow thistle, purple loosestrife, Russian knapweed, and salt cedar.

12.2 Non-vegetative Cover / Permanent Erosion Control

The planned permanent erosion control non-vegetative cover BMPs for this site include access roads, turbine foundations, an O&M building, a substation, and meteorological towers.

13.0 NOTICE OF TERMINATION

The project permit may be terminated in one of the following scenarios.

1. All construction activity is complete, temporary synthetic BMPs are removed, accumulated sediment from construction is removed, and final stabilization is completed with vegetative and/or non-vegetative cover. The Notice of Termination form from the South Dakota Department of Environment and Natural Resources should be completed within thirty days of meeting the conditions above. Upon midnight of the post marked date, the permit coverage is terminated unless otherwise notified by the SDDENR.
2. Within thirty days of selling or otherwise legally transferring ownership of the site in its entirety (including street sweeping and stormwater infrastructure) from the original owner to another party taking responsibility of ownership.
3. Where the project obtained permit coverage but never started construction activity due to cancellation or other reasons. Documentation should be sent to the SDDENR with the NOT form and is subject to SDDENR approval.

14.0 RECORD RETENTION

During construction: this report, amendments and attachments, inspections, and maintenance records should be kept on site during normal business hours. The records should be kept by the owner or operator listed on the permit application. The records should be in a mailbox, in a vehicle or in an on-site office trailer or model home.

Post Construction/Notice of Termination (NOT): the site owner must retain all the following records for a period of at least three years after the submittal of the NOT:

- The final SWPPP with all field notes/amendments;
- Other stormwater related permits in addition to the NPDES permit from SDDENR;
- Inspection and maintenance records;
- All permanent operation and maintenance agreements; and
- All required calculations for design of the temporary and permanent stormwater management systems.

Attachment A

South Dakota General Permit for Stormwater Discharges Associated with Construction Activities SDR100000

Permit Number: SDR100000

SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

General Permit Authorizing Stormwater Discharges Associated with Construction Activities Under the South Dakota Surface Water Discharge System

In compliance with the provisions of the South Dakota Water Pollution Control Act and the Administrative Rules of South Dakota (ARSD), Article 74:52, owners and operators of stormwater discharges from **construction activities**, located in the state of South Dakota are authorized to discharge in accordance with the conditions and requirements set forth herein.

This General Permit shall become effective on April 1, 2018.

General permit coverage for the [PERMITTEE] shall become effective [EFFECTIVE DATE].

This General Permit and the authorization to discharge shall expire at midnight, **March 31, 2023.**

Signed this **23rd** day of **March, 2018,**

Authorized Permitting Official

Steven M. Pirner
Secretary
Department of Environment and Natural Resources

Note: *This page will be replaced with a copy containing the assigned permit number once coverage has been authorized.*

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