

# COYOTE CREEK MINING COMPANY, L.L.C.

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*A SUBSIDIARY OF THE NORTH AMERICAN COAL CORPORATION*

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August 4, 2016

Mr. James R. Deutsch  
Director Reclamation Division  
Public Service Commission  
600 East Boulevard Avenue  
Department 408  
Bismarck, ND 58505-0480

RE: Notice of Violation Number 1601

Dear Mr. Deutsch:

Notice of Violation (NOV) Number 1601 was issued to Coyote Creek Mining Company, L.L.C. (Coyote Creek Mine) on July 21, 2016.

In short, the NOV was issued for contribution of sediment/suspended solids to runoff outside the permit area for a four mile stretch of haul road north of the County Road 12 grade separation. Coyote Creek Mine received a significant precipitation event on July 3, two significant precipitation events on July 10 and a significant precipitation event on July 16 which contributed to the sediment issues. At the time of the first event the haul road had been seeded and vegetation was starting to establish and numerous Best Management Practices (BMPs) were in place including 9305 linear feet of silt fence, 6444 feet of pipe drains, 27,900 square feet of erosion control blanket, 14 rock check dams, 48 sumps, 1500 tons of rock rip-rap, 1200 square feet of concrete matting, 14 rock inlets, 14 plunge pools, and utilized what zero lift topsoil they had available on critical slopes. Because most of the haul road in slopes and back slopes were overburden material and much of it sandy material, the in-place vegetation and BMP's were not able to control the runoff from these four significant precipitation events that occurred within a two week period. Coyote Creek Mine incorporated a significant number of measures to control erosion and collect sediment on the haul road.

The NOV addresses three steps and time of abatement and our remedial action for each is as follows:

1. "Complete the application of mulch to the haul road cut and fill slopes by July 25, 2016."

Immediately after receiving NOV 1601 on July 21, 2016, CCM started actions to comply with the required remedial actions. Mulching operations that had started on July 20<sup>th</sup> were nearly complete south of County Road 12, so the mulching crew advanced to the north side of County Road 12 to the area identified in the NOV. The outside revegetation contractor brought additional mulching equipment so that two mulching operations could work until near dark on Thursday, July 21, and Friday, July 22 and most of the day on Saturday, July 23 to meet the Monday, July 25<sup>th</sup> deadline identified in the NOV. The haulroad cut and fill slopes in Sections 8, 9 and 18, T143N, R88W were mulched at an application rate of approximately two tons per acre.

2. “Stabilize and protect the cut and fill slopes draining to Discharge Point 9 with erosion control blanket and other materials as appropriate by July 27, 2016.”

Cut and fill slopes draining to Discharge Point 9 were stabilized and protected by July 27, 2016. Additional stabilization efforts including additional erosion control blanket and addition of topsoil material are in progress.

3. “Provide the plan for long-term slope stabilization of all haul road cut and fill slopes and improved water management structures/systems for all haul road discharge points along with engineering design plans for haul road Discharge Points 9 and 12 by August 4, 2016.”

BMPs are being modified and improved to provide short-term site protection. Plunge pools will be cleaned out and enlarged or deepened if needed and additional rocks will be placed where required. The sumps in ditch bottoms near discharge points, after July’s large rain events were observed to often be a source of sediment, so many are being removed. After sumps are removed, ditch bottoms are being shaped to tie into the drain bottoms with as gradual a slope as the site allows and erosion control blanket installed on most ditch bottoms, as well as in-slopes in areas more susceptible to erosion. Erosion control blanket will provide a continuously protected flow path in the ditch bottoms, starting at the top of the steep slopes all the way to the bottom of the drains. On the extremely steep portions of the ditch bottoms, sumps and silt fences will not be used, since they will be weak points susceptible to erosion in the otherwise protected flow paths and their primary purpose is not to prevent erosion but to collect sediment. Instead, silt fences and sumps will be located on the flatter portions of the ditches above erosion control blanket and immediately below the erosion control blanket. This is because ditch bottoms that are protected and stabilized with erosion control blanket aren’t expected to contribute sediment to runoff, whereas interrupting the erosion control blanket protected flow path on steep slopes may introduce weak areas in the protection.

In addition to utilizing BMPs to provide short-term protection, measures are being taken to improve vegetation establishment to provide long-term site protection. Although the entire haulroad corridor has been seeded once and in some locations, twice previously, vegetation establishment has been poor in overburden areas. Overburden material in the cut and fill slopes is typically quite sandy and because of its low water holding potential and relative infertility, vegetation establishment has been slow. Overburden below the sandy material is sodic and also poor for vegetation establishment. Several strategies are being utilized to improve this. Most significantly, approval was received from the Public Service Commission to utilize a 19,000 cubic yard topsoil that the mine obtained from the Coyote Station to spread on the more critical haul road slopes. This was necessary because respread of topsoil and subsoil salvaged from the mine wasn’t allowed by the Public Service Commission for use on haulroad slopes to aid in vegetation establishment. The entire Coyote Station topsoil pile was hauled to the haulroad corridor and approximately 2 to 3 inches of topsoil was spread on back-slopes and in-slopes identified as being the most susceptible to erosion. Secondary measures to be utilized in site specific areas are fertilization and irrigation. Fertilizer is being applied in ditch bottoms underneath the erosion control blanket and will be applied on other small portions of the haulroad where an additional boost in fertility is anticipated to aid in vegetation establishment. On some especially dry slopes, water trucks may be utilized to spray water to aid in initial grass seedling establishment.

Mr. James R. Deutsch  
August 4, 2016  
Page 3

At Discharge Points 9 and 12, slopes were respread with several inches of topsoil, seeded with an oats cover crop and the perennial seed mix, and erosion control blanket installation is in progress. Erosion control blanket will be installed in ditch bottoms. Erosion control blanket will start at the top of the ditch slopes at the berms over the drain pipes, and continue downslope to the bottom of the drain or to the rock-plunge pool. Erosion control blanket will also be installed on in-slopes. Erosion control blanket installation will continue approximately one third of the way up the in-slope from the drain bottom. Fertilizer will be applied underneath much of the erosion control blanket. On the in-slope above the erosion control blanket, two parallel rows of straw wattles will be installed to slow runoff and interrupt the formation of rills prior to runoff reaching the erosion control blanket. All disturbed areas above the erosion control blanket will also be mulched and crimped.

Stabilization at other discharge points will be similar. Areas with little visible erosion will receive less erosion control blanket, focusing primarily on ditch bottoms. Areas more prone to erosion will be stabilized with erosion control blanket similarly to Discharge Points 9 and 12, with erosion control blanket in the ditch bottoms, partially up the in-slope, and straw wattles installed above the erosion control blanket. All disturbed portions of the haulroad will be seeded with an oats cover crop, the approved perennial seed mix listed in NACC-1302, mulched and crimped, except for very small areas that are inaccessible with the crimper.

Engineering design plans for Discharge Points 9 and 12 are included in Tables 1 and 2. Design results for the eight pipe drains associated with these two locations are shown in Table 1. The design of the erosion control blankets at each of the four in-slope locations for each location are included in Table 2.

Sincerely,

COYOTE CREEK MINING COMPANY, L.L.C.



Donn R. Steffen  
Engineering and Environmental Manager

**Table 1  
Pipe Drains**

		10 Year 6 - Hour Event								
Station	Acres	Peak Discharge (cfs)	Peak Discharge (gpm)	Length (feet)	Inlet (feet)	Outlet (feet)	Slope	Pipe Diameter (in)	Required Head (feet)	Amount of Head (feet)
<b>Discharge Point 9</b>										
NW	1.34	1.77	794	206	1865	1831	17%	15	0.77	2.39
NE	1.27	1.7	763	141	1862	1831	22%	15	0.75	2.12
SW	3.9	2.48	1113	166	1866	1836	18%	15	0.93	2.80
SE	6.28	2.08	934	139	1869	1836	24%	15	0.84	2.09
<b>Discharge Point 12</b>										
NW	2.85	3.76	1688	233	1887	1840	20%	15	1.19	1.73
NE	2.16	2.87	1288	192	1884	1840	23%	15	1.01	2.19
SW	5.21	4.79	2150	161	1883	1844	24%	15	1.38	2.19
SE	6.81	2.98	1338	202	1884	1846	19%	15	1.03	2.92

**Table 2  
Erosion Control Blanket**

	Acres	10 Year 6 - Hour Event	
		Peak Discharge (cfs)	Peak Flow (ft/s)
<b>Discharge Point 9</b>			
NW	0.66	0.73	1.71
NE	0.46	0.53	1.67
SW	0.66	0.57	1.55
SE	0.65	0.59	1.66
<b>Discharge Point 12</b>			
NW	2.60	1.12	2.12
NE	0.56	0.77	1.94
SW	0.60	0.54	1.56
SE	2.21	1.13	2.26

Coyote Creek Mine utilizes SC150 erosion control blankets which consist of a 70% straw and 30% coconut mix good for 8 feet per second.