

**PUBLIC SERVICE COMMISSION**

Reclamation Division

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Memorandum

TO: Commissioners Kalk, Cramer and Fetch  
FROM: *GW DKM JJD*  
Guy Welch, Dean Moos and Jim Deutsch  
DATE: August 24, 2012  
SUBJECT: Bond Release No. 4 to Surface Coal Mining Permit NACT-9101 held by the Coteau Properties Company, Case No. RC-11-76

**Summary** – On March 1, 2011, The Coteau Properties Company filed Final Bond Release Application No. 4 to Surface Coal Mining Permit NACT-9101 requesting release of all reclamation liabilities on 448.6 acres of land located in Section 21, T145N, R86W, at the Freedom Mine. The reclaimed lands are subject to our current reclamation law and rules and Coteau has demonstrated that the reclaimed lands have met all applicable final bond release performance standards. The Reclamation Division recommends approval of this bond release application based on the findings discussed below.

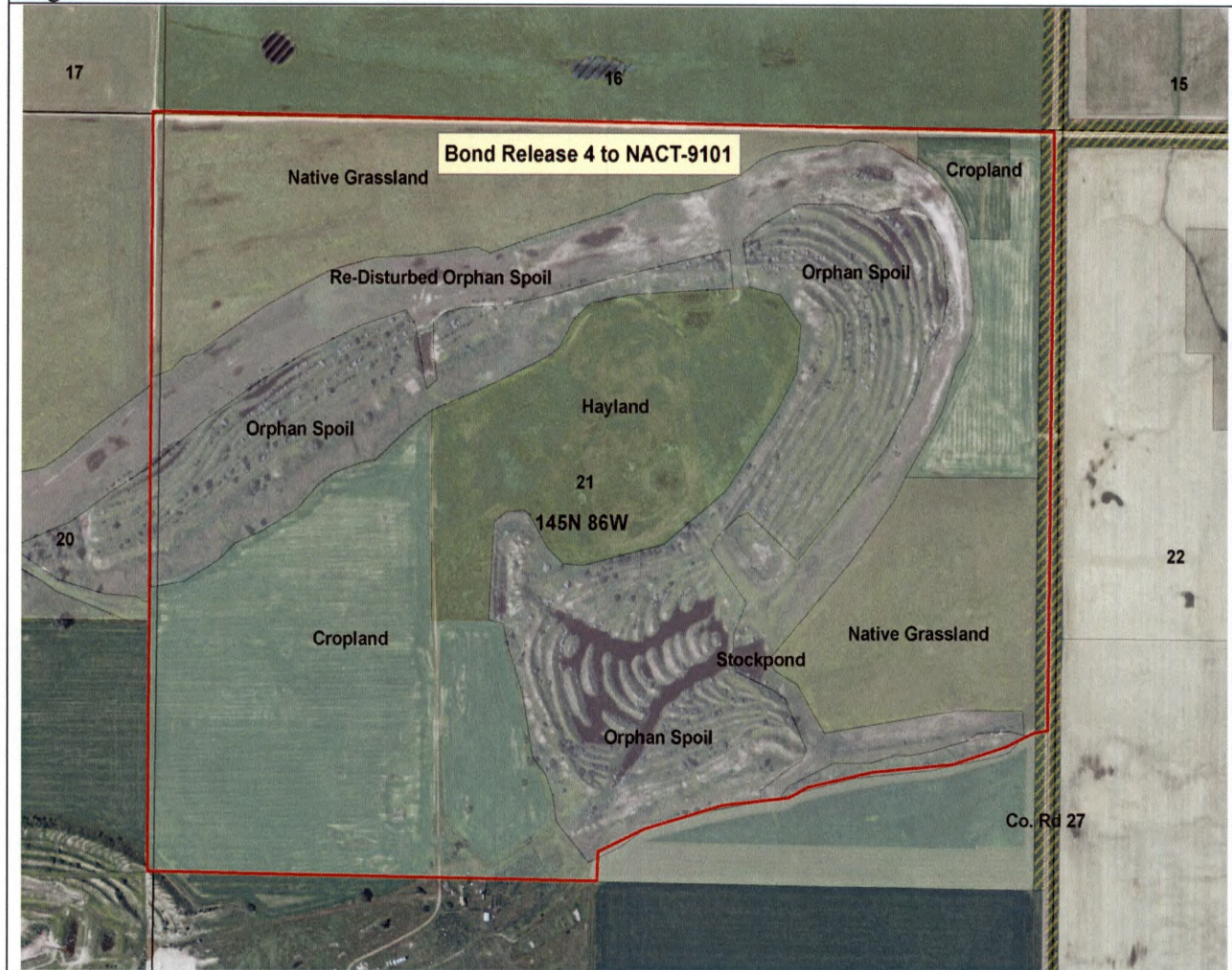
**Discussion** – The Coteau Properties Company owns all of the lands included in Bond Release Application No. 4 to Permit NACT-9101. The proposed bond release tract contains approximately 96.3 acres of reclaimed cropland, 98.5 acres of reclaimed native grassland, 60.8 acres of redisturbed orphan spoil and 5.4 acres of reclaimed public roads or rights-of-way. The bond release area contains 187.6 acres of land that was not affected by Coteau’s mining activities. The reclaimed cropland includes 4.4 acres of prime farmland soils and an additional 20.7 acres of prime farmland soils that were not mined but affected by associated disturbance.

Affected areas in this bond release tract were initially disturbed in 1992 and coal removal was completed by 1995. Backfilling and grading were completed from 1994 through 1997 and soil respreading activities and initial seedings were completed from 1994 through 1998. Topsoil and subsoil stockpiles and redisturbed orphan spoil sites were reclaimed in 2000. The reclaimed cropland and native grasslands were respread with 9.9 to 12.8 inches of topsoil and subsoil respread depths ranged from 11.2 inches to 38.1 inches. Affected portions of County Road 27 were reclaimed on the east side of this tract and a statutory section line trail was reclaimed along the north and a portion of the west sides of this tract.

There have been no previous partial bond releases on this property. Therefore, first (backfilling and grading), second (soil respreading), third (vegetation establishment) and fourth (vegetation performance standards) stage bond release is being requested for this tract.

Coteau has demonstrated that the revegetation performance standards have been achieved for the various land uses as discussed below and described in the bond release application. Figure 1 below is a small scale map of the bond release area.

Figure 1: Final Bond Release No. 4



## Reclaimed Cropland

Our revegetation success standards require that each land owner's property be evaluated independently for the purposes of demonstrating revegetation success. Coteau has purchased much of the permitted land at the Freedom Mine and they have developed regional revegetation success standards for the lands that they own. The land included in this bond release application is included in a regional revegetation success standard that has been developed for multiple tracts that Coteau owns in the Dakota Star Mine Area. The cropland productivity standards are based on the pre-mine productivity of the soils that existed prior to mining. Three years of yield data is needed to demonstrate revegetation success of prime farmland while only two years of data is needed for non-prime farmland beginning after year six of the 10-year revegetation responsibility period. Coteau developed a single yield standard (combined prime and non-prime yield standard) so three years of yield data is needed beginning no sooner than year seven of the responsibility period.

The reclaimed cropland included in this bond release application contains 4.4 acres of prime farmland that was actually mined and 20.7 acres of prime cropland that was affected by soil stockpiles. The unadjusted yield standard for the cropland included in this bond release tract was calculated to be 29.55 bushels of wheat per acre. For management purposes, the cropland field boundaries were "squared-up" and

therefore include some undisturbed cropland acreage which is accounted for in the development of the standard. A portion of the cropland included in this bond release application was managed as hayland during the responsibility period (55 acres), which is how it was managed prior to mining. The 65.5 acres of cropland is being used to demonstrate revegetation success of all the reclaimed cropland and hayland in the bond release tract. Local cooperators farmed the reclaimed land to demonstrate revegetation success and the whole field harvest method was used to demonstrate revegetation success. Spring wheat was grown during the years being used to demonstrate revegetation success. The reclaimed cropland being managed as hayland was tilled in 2011. Although not necessary, data was included in the bond release application showing that the reclaimed hayland yields achieved the hayland revegetation success standard.

The unadjusted yield standard was climatically adjusted using North Dakota Agricultural Statistical Services average annual county yield data. Table 1 below provides a summary of the adjusted standard and actual yield. The actual yield exceeds the standard for three years beginning after year six of the revegetation responsibility period. Thus, the cropland revegetation performance standard has been achieved.

**Table 1: Cropland Standards**

Sample Year	Adjusted Yield Standard	Actual Yield
2007	26.6 bushels/acre	32.1 bushels/acre
2008	18.6 bushels/acre	18.7 bushels/acre
2009	43.5 bushels /acre	62.0 bushels/acre

**Reclaimed Native Grassland**

Mining companies must demonstrate that reclaimed native grasslands yield as good as or better than the expected yields of the pre-mine soils during any two years after year six of the ten-year revegetation responsibility period. The calculated productivity standard is based on the pre-mine soils and is climatically adjusted annually with the use of native grassland reference areas on nearby undisturbed lands. The ground cover standard is developed using native grassland reference areas and a value that the Agriculture Research Service (ARS) determined to be sufficient to control erosion. The diversity standard requires that at least five native grass species be present on the reclaimed tract and native species must comprise at least 65% of the total vegetative composition. Kentucky bluegrass, a widespread introduced species that some consider a naturalized species, may be counted towards the diversity standard to the extent it is present on the reference area(s). The seasonality standard requires that warm season grasses comprise be at least 15% of the composition. In addition, four native grass species must each contribute at least 3% relative live basal cover or 5% relative composition by weight. Of these four species, at least two must be warm season species and at least one must be a cool season species.

The reclaimed grassland was seeded with seven native species; western wheatgrass, slender wheatgrass, green needlegrass, blue grama, sideoats grama, switchgrass and little bluestem. Vegetation sampling data from years ten and eleven of the responsibility period, 2009 and 2010, show that the revegetation standards have been achieved as summarized in Tables 2a, b and c below. The productivity and cover standards were developed using the pre-mine soils of the Dakota Star Region of the mine, which includes this proposed bond release area, as approved in Coteau’s Consolidated Vegetation Success Standards (CVSS) document.

The permanence standard is achieved by the established vegetation’s continued persistence on the reclaimed area. This reclaimed native grassland was managed with livestock grazing during the

revegetation responsibility period. The support facilities necessary to implement the postmine native grassland land use have been installed; i.e., fence and livestock water facility.

**Table 2a: Native Grassland**

Year	Production (lbs/acre)		Ground Cover (%)	
	Standard	Reclaimed	Standard	Reclaimed
2009	2323	2,323	89.5	99.4
2010	2,011	3,053	89.5	99.7

**Table 2b: Native Grassland**

Seasonality	Standard	2009	2010
% Warm Season Composition	15	25.7	33.7
Number Cool Season Species >3%	1	2	2
Number Warm Season Species >3%	2	3	3

**Table 2c: Native Grassland**

Diversity	Standard	2009	2010
Total Number Species Present	5	5	7
Number Species >3% Composition	4	5	5
% Native Species Composition	65	94.7*	85*

\*Includes Kentucky bluegrass to the extent present on the native grassland reference areas (19% in 2009 and 24.4% in 2010)

**Redisturbed Orphan Spoil**

Approximately 60.8 acres of pre-law orphan spoil in Section 21 were re-affected by Coteau to accommodate coal removal adjacent to the orphan spoil. No topsoil or subsoil was available for salvaging on the disturbed orphan spoil and none was respread on the redisturbed orphan spoil. The affected areas were graded to ensure runoff would be self-contained in the pre-law orphan spoil areas and this land was essentially reclaimed to function as fish and wildlife habitat. Thirteen small temporary and seasonal wetlands were created in the graded orphan spoil. A permanent spoils pond was created in the orphan spoil to function as a developed water resource. A portion of the orphan spoil is being managed with the reclaimed native grassland to allow access to water sources in the undisturbed orphan spoil and to facilitate management of the reclaimed native grassland. The redisturbed orphan spoil was seeded to a diverse mixture of 17 species of native and introduced grasses.

The revegetation performance standards for the redisturbed orphan spoil is that ground cover must not be less than can be supported by the best available plant growth material in the reaffected areas, nor less than the ground cover that existed before redisturbance. Sampling data in the bond release application shows ground cover on that redisturbed spoils (92.6%) is greater than (81%) representative areas of adjacent undisturbed spoils.

**Wetlands**

The bond release tract had five temporary and ephemeral wetlands comprising approximately 2.1 acres of land prior to mining. Eight temporary wetland features comprising 1.4 acres are present on the reclaimed cropland, hayland and native grassland areas. The orphan spoils wetlands are replacing 0.7 acres of temporary and ephemeral wetlands that existed on this tract of land prior to mining. There are no specific performance standards for reclaimed temporary or ephemeral wetlands other than that they exist and are functioning as intended, which is the case.

## **Roads**

All disturbed public roads and right-of-ways were reclaimed and are open for public travel. This includes approximately ½ mile of reclaimed County Road No. 27 which is a paved road, and a section line road along the north and a portion of the west side of the tract. Mercer County Road Superintendent has inspected the roads and provided concurrence that the roads are in satisfactory condition.

## **Hydrologic and Wildlife Assessments**

Coteau has completed surface and ground water postmine hydrologic assessments for the bond release and adjacent area. The reports show that there was no material damage to the hydrologic balance outside the permit area and no significant unmitigated negative impact to the surface and ground water resources within the bond release area. The bond release application contains a wildlife report that concludes that habitat on this area has been improved with an additional 82.9 acres of native grassland compared to the premine acreage and that additional wetlands in the redisturbed orphan spoil area improves the wildlife habitat value of the bond release area. Biennial wildlife monitoring reports indicate that a variety of wildlife utilize the area.

## **General Information**

The formal bond release inspection was conducted on October 13, 2011. Donn Steffen, Jessica Unruh and Terence Schmidt from The Coteau Properties Company, Mercer County Commissioners Frank Bitterman and Wayne Entze and several Reclamation Division staff participated in the bond release inspection. Other representatives from various state and federal agencies were invited to participate in the inspection.

Observations made during the inspection indicated that the reclaimed native grassland is established with a good mixture of native cool and warm season species and plant vigor was high. Kentucky bluegrass was prevalent throughout and smooth brome grass appeared to be more abundant in the northern portion of the tract. The established vegetation was providing excellent protection from erosion. The redisturbed orphan spoil was supporting a diverse mix of native and introduced species that generally appeared to be providing adequate protection from erosion. The reclaimed hayland had been harvested and the number of bales present indicated the reclaimed land had yielded well. The reclaimed cropland was supporting a dense stand of sunflowers. The spoils pond was functioning as a developed water resource for cattle grazing the reclaimed native grassland. The only issue identified during this inspection was that a temporary wetland that had formed on the cropland/native grassland boundary that was not accounted for in the bond release application. The bond release application was subsequently updated to reflect this temporary wetland.

The actual soil respread thicknesses on the tract were verified by the Reclamation Division staff with a truck mounted soil probe at 41 locations on October 20, 21, and November 4, 2010. No concerns were noted with the soil respread thicknesses within the mining disturbance boundary, but the topsoil respread thickness was initially noted as short at several locations within the associated disturbance boundary used for topsoil and subsoil stockpiles. Follow-up verification of topsoil thickness within the associated disturbance boundary was conducted during the October 13, 2011 bond release inspection. Topsoil thickness observations from several shallow excavations completed near the original probe locations indicated that the topsoil respread thickness was adequate.

Notice of the bond release application was published in the official county newspaper, the Hazen Star, and the Beulah Beacon weekly from October 13<sup>th</sup> through November 3, 2011. No objections to this bond release application were received.

Coteau is not requesting any reduction in the bond amount since this area is currently covered by a worst-case reclamation condition that still exists at the Freedom Mine. This area is part of a consolidated bond area that includes Permit NACT-9101 and others at the Freedom Mine. If Bond Release No. 4 to Permit NACT-9101 is approved, The Coteau Properties Company will be released from all reclamation liabilities on the 448.6 acres of land. Assuming August 29<sup>th</sup> approval, the bond release will become effective October 1, 2012, unless a formal hearing is requested.

Attached is a proposed motion and bond release award form for consideration at the August 29<sup>th</sup> meeting.