

Jeffcoat-Sacco, Illona

From: Mann, Wade C.
Sent: Monday, March 02, 2015 4:50 PM
To: Jeffcoat-Sacco, Illona
Subject: FW: Coyote Creek Mine--PSC Case No. RC-13-850, OAH File No. 20140505
Attachments: Affidavit of David Bickel.pdf

Here you go.

-----Original Message-----

From: Brian R. Bjella [<mailto:bbjella@crowleyfleck.com>]
Sent: Thursday, February 26, 2015 2:41 PM
To: Mann, Wade C.
Cc: Jeffcoat-Sacco, Illona; Derrick Braaten; Blaine Johnson
Subject: Coyote Creek Mine--PSC Case No. RC-13-850, OAH File No. 20140505

Judge Mann-

By your Order On Late-Filed Exhibits dated February 12, 2015, the two infrared photographs supplied by the PSC were admitted into evidence, as was PSC's May 16, 2013, AVF Report.

Pursuant to the Order, Mr. Voigt was given the opportunity to file affidavits from his expert witnesses. The Order states in part that "the affidavits shall be limited in scope and address only the recent late-filed exhibits indentified as Voigt Exhibits 18-20. Information contained in the affidavits beyond the scope of the late-field exhibits shall not be considered."

Mr. Voigt subsequently filed an affidavit of Charles Norris. This affidavit does not include the PSC infrared photos, but instead includes new and different infrared photos obtained from <https://www.satshot.com>. These photos are not only hearsay, but completely lack foundation. In addition, these new infrared photos clearly go beyond the scope set forth in the Order. This includes paragraphs 24-30 of the Norris affidavit which discuss these new infrared photos in detail. These new infrared photos are materials that were readily available to Mr. Norris prior to the PSC hearing, and could have been submitted at the hearing, assuming any evidentiary objections were resolved. But he did not attempt to do so.

Coyote Creek Mining Company objects to inclusion of the new infrared photos and to paragraphs 24-30 of the Norris affidavit.

Pursuant to the Order, Coyote Creek Mine has until February 27 to submit an affidavit from any of its witnesses. Attached hereto for filing is an affidavit of David Bickel, Coyote Creek Mine's AVF expert at the hearing. In order that Coyote Creek Mine not be prejudiced should Mr. Norris's affidavit be admitted in its entirety along with the new infrared photos, Mr. Bickel has addressed the new infrared photos in his affidavit.

Brian Bjella

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105 RC-13-850 Filed: 2/26/2015 Pages: 10
**Affidavit of David Bickel and Objection to admission
of part of Norris Affidavit and attachments**

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**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF NORTH DAKOTA**

Coyote Creek Mining Company, LLC
Permit NACC-1302
Application

Case No. RC-13-850

**AFFIDAVIT OF
DAVID BICKEL**

STATE OF NORTH DAKOTA)
)SS.
COUNTY OF BURLEIGH)

David Bickel, being first duly sworn under oath, states as follows:

1. That I am a citizen of the United States of America, of legal age, residing at Bismarck, North Dakota.
2. That I am the owner of the consulting business, Bickel Consulting, LLC, Box 993, Bismarck, North Dakota 58502.
3. That I have a Bachelor's of Science and Master's Degrees from the University of Louisville in biology. My emphasis was in limnology, being the science of the physical, chemical, and biologic interactions in fresh water resources. In addition I have a Ph.D. in geology from Ohio State University.
4. That for 17 years, from 1989 – 2006, I served as the ground water and surface water hydrologist for the Reclamation Division of the North Dakota Public Service Commission. My duties included all aspects of surface and ground water hydrology with respect to coal mines in North Dakota as regulated by the Public Service Commission. My work at the Public Service Commission included

reviewing dozens of alluvial valley floor determinations submitted to the Public Service Commission for approval by staff.

5. I have made several presentations to the federal Office of Surface Mining, Office of Technology Transfer seminars and forums regarding alluvial valley floor (AVF) determinations and other hydrologic topics.
6. That I was retained by Coyote Creek Mining Company to prepare an AVF report for its new proposed Coyote Creek Mine. I commenced my work in May of 2012 and completed the report in August 2013.
7. In preparing my AVF report, I used independent data which included United States Geological Survey hydrological data; Natural Resource Conservation Service soils data; National Oceanic and Atmospheric Administration weather data; North Dakota State Water Commission hydrologic data and water use permits; previous AVF report prepared for the Dakota Westmoreland Beulah Mine which adjoins the Coyote Creek Mine; and available vegetation, land use, wetland and spring/seep data collected during field surveys by Kelly Krabbenhoft of KDK Consulting in 2012. In addition, I reviewed information regarding soils data from the soils investigations conducted by Prairie Soils Consulting; existing groundwater monitoring wells installed in the 1980s and 2012 in alluvium for Coyote Creek; preliminary geologic mapping by Coyote Creek Mining Company staff relating to seep and spring flow to water bearing layers; and aerial photography to substantiate and augment Mr. Krabbenhoft's land use inventories, and review and spatially organize other data.

8. The term “subirrigation” is understood to mean the supply of water to plant roots from an underlying alluvial ground-water system such that the vegetation is more productive than in other areas, and that the vegetation continues to grow during the moisture-stress portion of the growing season. Some low lying areas have greater vegetation productivity than adjacent uplands merely because of better soils, improved topography, snow drift accumulation, or occasional flood overflow. These areas are not considered to be subirrigated, and one of the tasks of an AVF study is to distinguish those valley areas whose productivity is a result of subirrigation, and those valley areas whose productivity is a result of water from another source. The water availability criteria for determining an AVF excludes areas that could be developed for subirrigation by establishing deep leaf alfalfa to tap ground water not used by native vegetation. Alluvial Valley Floor Identification Study Guidelines, Office of Surface Mining Reclamation and Enforcement, August 1983, page 11-9-10 (Casey Voigt Exhibit No. 15).
9. Environmental characteristics, agricultural uses and irrigation practices within stream valleys vary in different coal regions of the western United States. Therefore, the specific rationale used for identifying the role and character of alluvial valley floors vary from one region to the next. Draft Reconnaissance Maps to Assist in Identifying Alluvial Valley Floors, West-Central North Dakota, Office of Surface Mining Reclamation and Enforcement, 1985, page 1 (Casey Voigt Exhibit No. 2).
10. The two infrared maps sought to be introduced by Casey Voigt represent only a reconnaissance-level effort and identification of areas which are likely to meet a

definition of alluvial valley floor, and therefore are called potential alluvial valley floors. The intent of the mapping effort was to identify areas which might, at a future date, be designated as alluvial valley floors. Because this is only reconnaissance-level data, it is recognized that detailed data collected from a specific area is needed to more conclusively prove or disprove whether an AVF exists. (Casey Voigt Exhibit No. 2, page 1).

Because the environmental characteristics, agricultural uses and irrigation practices of stream valleys vary in different regions of the West, the specific rationale used for identifying or determining the role and character of an alluvial valley floor varies from region to region. A regional understanding of irrigation and agricultural practices is a pre-requisite to making assessments of alluvial valley floor status. (Voigt Exhibit No. 15, page II-1).

11. If certain stream valleys do not serve a special role in agricultural land use in a particular coal region, or if their role is not a function of water availability, then these streams are not alluvial valley floors within that particular region. (Voigt Exhibit No. 15, page II-13). The emphasis by Mr. Voigt's expert on remote imaging and other reconnaissance techniques focused on a relatively small flood plain area while overlooking regional agricultural practices and regional climatic conditions that are more central to understanding the alluvial valley floor status of Coyote Creek and other streams in the region.
12. Unlike drier areas in states such as Montana and Wyoming, the wetter climate and better soil quality in west-central North Dakota enable upland areas as well as stream valleys to produce crops and hay so that the smaller fields along stream

valleys are not significant components in regional agriculture. Upland and floodplain areas are not managed differently. Farming and ranching operations can and do operate successfully without access to fields on flood plains. The upland grazing areas are productive in this west-central region of North Dakota, unlike drier regions further west. This is a major determinant that no AVF exists on Coyote Creek. (Voigt Exhibit #15, page II-13).

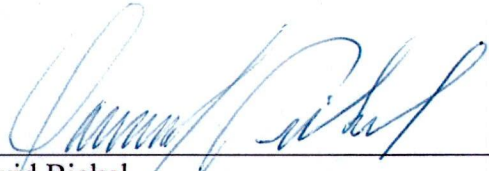
13. The availability of Mr. Voigt's alfalfa fields on the Coyote Creek floodplain to produce crops is not the issue. The ability of deep rooted alfalfa to reach the saturated zone on the floodplain is also not the issue. Mr. Voigt and other ranch operations in the area are able to produce hay in uplands, as well as in floodplain areas.
14. The emphasis on 35-year old infrared reconnaissance level photography--rather than evaluation of regional agriculture and direct field observation as I have done, and was also done in the recent AVF studies of Coyote Creek for Dakota Westmoreland, is the difference between my testimony and that of Mr. Voigt's expert. Mr. Voigt's expert continues to postulate on the potential for an AVF, I have demonstrated that no AVF exists.
15. Approximately 30 years of data acquisition and field observation in west central North Dakota by Public Service Commission professionals, Office of Surface Mine professionals, professional environmental scientists; numerous AVF reports for BNI Coal's Center Mine, Falkirk Mining Company's Falkirk Mine, Dakota Westmoreland Company's Beulah Mine, The Coteau Properties Company Freedom Mine, and others have amassed a vast and voluminous data base. In

addition are the thousands of man hours conducted for on the ground field investigation in stream valleys in this region of North Dakota.

16. This data, which also includes decades of subsequent monitoring for mining permit compliance, have shown that early reliance on remote infrared imagery produced a false positive of AVF potential.
17. This data also shows that in this region of North Dakota the patchwork quilt pattern of cropland and hay land is present on the uplands as well as stream valleys. This demonstrates that no AVF exists on Coyote Creek, as determined pursuant to federal Office of Surface and Mining guidelines. (Voigt Exhibit #15, page II-13).
18. My determination, the determination of experts with the Public Service Commission and other outside experts, have all concluded that no AVF exists within the Coyote Creek floodplain.
19. Mr. Norris in his affidavit included new satellite images with respect to Mr. Voigt's alfalfa fields. Attached hereto as Exhibit A are additional satellite imagery from the same website used by Mr. Norris. These images depict that at various times of the year these fields do not have enhanced production, but rather the uplands do. For example, in the July 4, 2014, image the fields are blue indicating diminished production, but the uplands are red depicting enhanced production. Mr. Norris's statement that a PSC inspection in September would have demonstrated "clear evidence of enhanced production" is not correct. Taken in their totality these satellite images demonstrate that there is no AVF within

Coyote Creek, and that the uplands are a significant source of grass for cattle grazing.

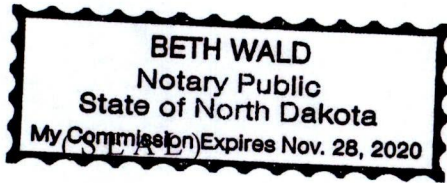
Dated this 4th day of February, 2015.



David Bickel

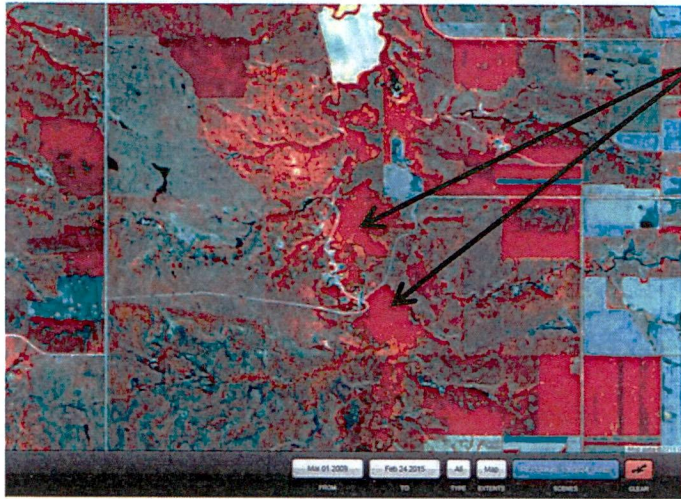
STATE OF NORTH DAKOTA))SS.
COUNTY OF BURLEIGH)

Subscribed and sworn to before me this 26 day of February, 2015, by David Bickel.



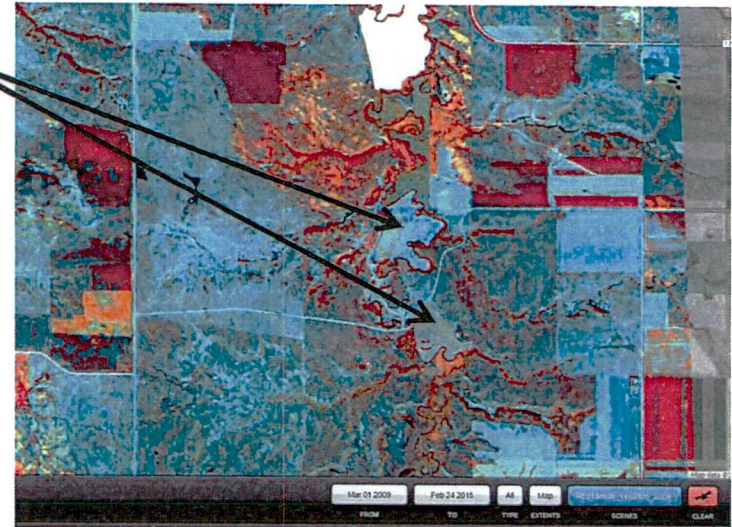
Beth Wald

Notary Public
Burleigh County, North Dakota
My Commission Expires:

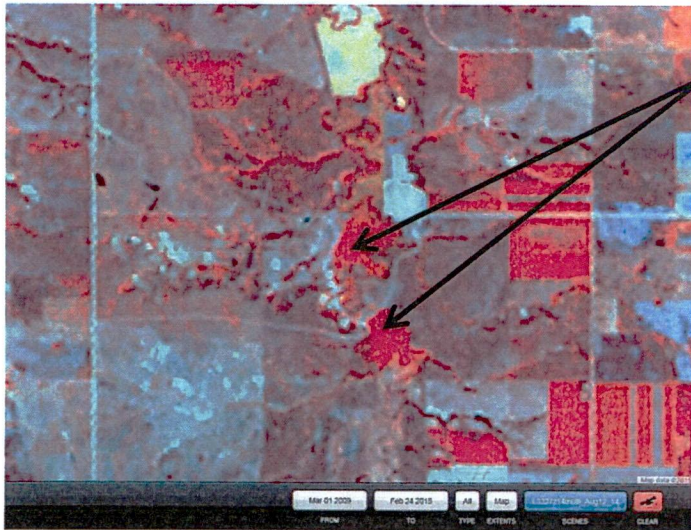


June 9, 2014 Satellite Imagery

Voigt's lowland hayland.

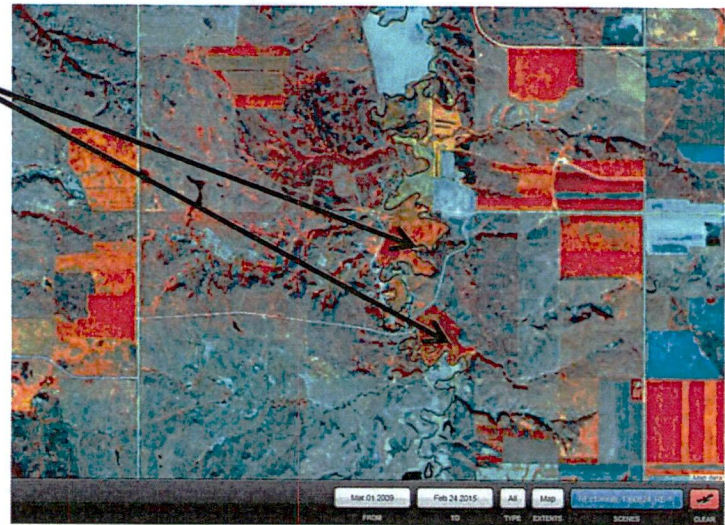


July 4, 2014 Satellite Imagery



August 12, 2014 Satellite Imagery

Voigt's lowland hayland.



September 6, 2014 Satellite Imagery