

US EPA ARCHIVE DOCUMENT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Colonel Andrew W. Backus
U.S. Army Corps of Engineers
Norfolk District Regulatory Branch
803 Front Street
Norfolk, Virginia 23510-1096

23 AUG 2010

Re: PN NAO-2007-003433, Norton Coal Company, LLC., Convict Hollow East Surface Mine, Buchanan County, Virginia

Dear Colonel Backus:

The U.S. Environmental Protection Agency (EPA) has reviewed the public notice for Norton Coal Company's Convict Hollow East Surface Mine located near the community of Maxie, Buchanan County, Virginia. EPA's review and comments, herein provided, are based upon the Public Notice posted on July 8th, 2010, the Joint Permit Application (JPA) dated September 25th 2009, and the supplemental information for this project dated July 2010. EPA's review is intended to ensure that the proposed project meets the requirements of the Clean Water Act (CWA). The CWA Section 404(b)(1) Guidelines (40 C.F.R. Part 230) provide the substantive environmental criteria against which this application must be considered. Fundamental to the Guidelines is the premise that no discharge of dredged or fill material may be permitted if: (1) it causes or contributes, after consideration of disposal site dilution and dispersion, to violations of any applicable state water quality standard; (2) a practicable alternative exists that is less damaging to the aquatic environment; or (3) the nation's waters would be significantly degraded.

The proposed site is a few river miles upstream from the Kentucky state line. The project consists of land disturbance of 162 acres, including 45 acres of remining. The proposal involves the direct impact to 1,949 linear feet (lf) of stream of an unnamed tributary of Convict Hollow which is a tributary to Bull Creek and an unnamed tributary to Poplar Creek. Both Bull Creek and Poplar Creek are direct tributaries to the Levisa Fork River which flows into the Big Sandy River. The applicant has proposed permanent impacts to 1,221 lf of ephemeral channel to construct 2 hollow fills and 25 lf of intermittent channel for a road crossing. Additionally, 380 lf of ephemeral channels and 323 lf of intermittent channels will be temporarily impacted for the creation of instream sediment ponds. The applicant is proposing stream restoration for the temporary impacts and stream creation in the groin ditches associated with the valley fills.

The Bull Creek watershed, including Convict Hollow, has been listed for biological impairment on the Virginia Clean Water Act (CWA) Section 303(d) list since 1998. A draft total maximum daily load (TMDL) for total dissolved solids (TDS) and total suspended solids (TSS) for Bull Creek has been submitted to EPA. Sections of the Levisa Fork River have also been



listed for biological impairment and for E.coli and PCBs. Poplar Creek has been listed as impaired for E.coli.

EPA's review was impaired because the applicant provided limited and inconsistent baseline water quality and biological monitoring data for the streams which are proposed to be impacted in addition to downstream receiving waters. The applicant provided Rapid Bio-assessment Protocol (RBP) scores using Eastern Kentucky Stream Assessment Protocol (EKSAP) for the reaches proposed to be impacted only. The applicant did not provide macroinvertebrate data for the unnamed tributary of Poplar Creek where fill #2 is proposed because the channel was dry when data was being collected. In the Joint Permit Application (JPA), the applicant indicated that the average Virginia Stream Condition Index (VASCI) for the unnamed tributary to Convict Hollow, where VF 1 is proposed, was 41.7 out of 100, giving the stream a severely impaired assessment score. EPA requests further data and support documentation for this project for our review. This includes water quality and benthic monitoring data for any adjacent mines to be considered as a predictor for impacts of the proposed project along with full water quality and macroinvertebrate baseline monitoring data from the project's sampling points from the initial collection of baseline data to the most recent sampling event for all streams proposed to be impacted. Additionally, EPA requests all RBP and ESKAP sheets associated with this application, to help us clarify the data provided for the respective reaches such as dates, locations, and scoring.

On April 1, 2010, EPA released interim final guidance to the Regional offices titled: *Guidance on Improving EPA Review of Appalachian Surface Coal Mining Operations under the Clean Water Act, National Environmental Policy Act, and the Environmental Justice Executive Order* (SCM Guidance). The SCM Guidance provides a framework for the Regions when they review permits for discharges associated with Appalachian surface mining projects. At the same time, EPA released two Office of Research and Development (ORD) reports: *The Effects of Mountaintop Mines and Valley Fills on Aquatic Ecosystems of the Central Appalachian Coalfields* and *A Field-Based Aquatic Life Benchmark for Conductivity in Central Appalachian Streams (Benchmark Conductivity Study)*. The ORD reports have been submitted to the EPA Science Advisory Board (SAB) for review and are also publicly available. In the interim, EPA views the reports as providing information, along with published, peer-reviewed scientific literature, that may inform permit reviews.

Alternatives Analysis – 40 CFR 230.10(a)

According to the Section 404(b)(1) Guidelines, only the least environmentally damaging practicable alternative (LEDPA) can be permitted, and to identify the LEDPA, the applicant's alternatives analysis must examine in detail the range of alternatives that would avoid and minimize impacts to aquatic resources to the maximum extent practicable. The applicant's alternative analysis provided to EPA included the no build, the analysis of various mining methods, such as contour only and deep mining for the northern and southern portions of the mine site, and the preferred proposed alternative. The preferred alternative includes area mining in the northern portion of the site and contour and auger in the southern portion. The alternatives analysis focused primarily on the feasibility of coal recovery by the various mining methods. The applicant briefly analyzed alternative placement of fills based on a series of criteria that determined the practicability of an alternative. As part of the analysis, a detailed explanation as to why the criteria used were applied to this site needs to be included.



Few details were provided for storage of excess spoil on adjacent mine sites as well as adjacent abandoned mine lands (AML) features. A more detailed discussion of a full range of practicable alternatives should be provided in order to appropriately determine the LEDPA. Specifically, EPA recommends additional evaluation of the project to identify opportunities through practicable, modern engineering, mining methods, and materials handling that would further reduce stream impacts and the number of valley fills. Examples include an analysis of utilizing side-hill fills to remain out of jurisdictional areas, ensuring the fills are pushed to ridge top while maintaining compliance with other applicable requirements, the use of over stacking above approximate original contour (AOC) where practicable, and the use of abandoned mine land features adjacent to the proposed mine. In addition, an alternatives analysis should incorporate a comparison of the alternatives on the linear extent of impacts per ton of spoil, which may minimize impacts to streams.

The alternatives analysis provided in the JPA or additional information did not discuss alternatives in construction techniques or best management practices to protect water quality and prevent significant degradation of the aquatic ecosystem. Stream impacts should be avoided to the maximum extent practicable and spoil placement should be controlled. Prior to authorization and construction of the proposed action, the applicant must demonstrate that the project will not cause or contribute to significant degradation and/or an excursion from applicable water quality standards. As discussed below, water quality impacts are a significant concern, therefore EPA recommends that the applicant address in the alternatives analysis the “sequencing” of the construction of the valley fills if the number of valley fills can not be reduced. In this context, the term “sequencing” refers to the construction of one valley fill at a time combined with a demonstration to the regulatory agencies that construction has not caused or contributed to significant degradation and/or an excursion from applicable water quality standards before the applicant proceeds to the construction of the next valley fill.

Compliance with Other Environmental Standards – 40 CFR 230.10(b)/Significant Degradation of the Aquatic Ecosystem – 40 CFR 230.10(c)

40 C.F.R. Section 230.10(b)(1) of the CWA Section 404(b)(1) Guidelines states that “no discharge of dredged or fill material shall be permitted if it causes or contributes, after consideration of disposal site dilution and dispersion, to violation of any applicable State water quality standard.” The Guidelines, at 40 C.F.R. Section 230.10(c) also prohibit any discharge of dredged or fill material which would cause or contribute to significant degradation of the aquatic ecosystem, with special emphasis placed on the persistence and permanence of effects, both individually and cumulatively. EPA is concerned that the applicant has not demonstrated that the project as proposed will comply with Sections 230.10(b) and (c).

The best information available to the Agency, including published, peer-reviewed studies, indicate the activities proposed by the applicant are strongly related to downstream biological impairment, as indicated by raw taxonomic data, individual metrics that represent important components of the macroinvertebrate assemblage, or when multi-metric indices are considered. These studies show that surface mining impacts on aquatic life are strongly correlated with ionic strength in the Central Appalachian stream networks. Increased conductivity impairs aquatic life use, is persistent over time, and cannot be easily mitigated after-the-fact or removed from stream channels. These impairments can rise to a level of significant degradation and/or may result in a



violation of Virginia's narrative water quality standards. Conductivity is a measure of the ionic strength within the water which represents the levels of total dissolved solids (TDS) and salinity in the water column. This information includes the Virginia TMDL process which has identified TDS as a biological stressor in the draft Bull Creek TMDL

The applicant provided limited as well as inconsistent baseline water quality and biological monitoring data for the streams which are proposed to be impacted in addition to downstream receiving waters. Such baseline data should be provided for waters on the proposed site as well as downstream receiving waters. The conductivity baseline levels submitted in the supplemental information show generally the directly impacted streams to be above 500 $\mu\text{S}/\text{cm}$. In order to evaluate the likely water quality impacts from this project, EPA requests baseline and recurring monitoring data and discharge information from the adjacent mine site along Convict Hollow. This monitoring data may inform an assessment of the potential environmental effects of the proposed operation since is situated in the same area as the proposed operation.

Based on the best information available to EPA, projects with predicted conductivity values below 300 $\mu\text{S}/\text{cm}$ generally are not likely to cause water quality violations or significant degradation of the aquatic ecosystem. Discharges with levels of conductivity above 500 $\mu\text{S}/\text{cm}$ generally are likely to be associated with adverse impacts that could cause or contribute to significant degradation and/or excursions from narrative water quality criteria. EPA recognizes that in certain fact-specific circumstances, instream conductivity levels greater than 500 $\mu\text{S}/\text{cm}$ may not cause adverse impacts to the biological community. To the extent the applicant believes that to be the case with this project, the applicant should supply a reasonable potential (RP) analysis in addition to an analysis of the ionic matrix and whether the discharge is dominated by calcium, magnesium, bicarbonate and sulfate and low in chloride. Where instream background conditions are limestone-dominated, that also should be noted. In addition, the applicant should provide an analysis of whether the native aquatic community is similar to that studied in the *Benchmark Conductivity Study* and in Pond, G.J., M. E. Passmore, F.A. Borsuk, L. Reynolds, and C. J. Rose. 2008, *Downstream effects of mountaintop coal mining: comparing biological conditions using family- and genus-level macroinvertebrate bioassessment tools*, J. N. Am. Benthol. Soc. 27(3):717–737. Any analysis based on differences of the native aquatic community should include a review of taxa (at the genus level) at applicable reference sites within the region.

Minimization and Compensation for Unavoidable Impacts – 230.10(d)

The applicant has proposed a mitigation plan that includes restoration of temporary impacts, creation of jurisdictional waters along the hollow fill groin ditches, and restoration of a portion of the stream below pond #1. As stated in the JPA, the goal of the mitigation is to "...create stream channels to handle flows similarly to pre-mining channels." The ecological integrity index scores from baseline monitoring and Stream Compensation Ratio Calculators are proposed to be used to determine necessary mitigation. EPA does not believe that groin ditches should be given mitigation credit because despite attempts to create functioning streams from groin ditches in connection with other projects, EPA is unaware of any evidence demonstrating that the use of groin ditches for on-site stream creation has successfully replaced the lost ecological functions of the stream channels proposed to be impacted. EPA suggests the applicant develop a robust comprehensive mitigation plan that does not include groin ditches as stream

creation and adequately compensates for the all the lost functions of the impacted stream channels.

EPA recommends that stream functional assessment information, which includes biological, chemical and physical components, should be provided for waters that will be impacted. Without this information it can not be determined if the applicant's proposed mitigation adequately replaces lost stream functions. In addition, EPA recommends that the permit include success criteria based upon observable and measurable benchmarks for water chemistry and biological function and a timeframe within which the benchmarks must be achieved. At present, the proposed compensatory mitigation plan for restored reaches does not include using water chemistry nor agreed to biological parameters as a measurement for success. Limited physical criteria are currently proposed to determine mitigation success. The applicant has offered limited macroinvertebrate data from sites within the area to compare to post mitigation sampling for success criteria. Further specific information on the biological monitoring should be submitted and agreed to by the Corps and EPA. EPA suggests considering the use of a longer monitoring period of 10 years rather than the currently proposed period of five years. Finally, an adaptive management plan should also be provided, beyond the contingency plan outlined in the JPA, which identifies alternate plans and strategies should the mitigation plan not meet the required performance standards. EPA requests the opportunity to review and provide further comments as this plan is further developed.

Determination of Cumulative Effects on the Aquatic Ecosystem – 230.11(g)

The Section 404(b)(1) Guidelines require consideration of cumulative impacts: “[A]lthough the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of the existing aquatic ecosystem.” There are impacts within the Upper Levisa Home Creek 12 digit HUC (hydrologic unit code) sub-basin in Virginia due to mining activities which may be significant when assessed cumulatively. In addition to historic and ongoing mining, there are additional proposed mining projects within the sub-basin as of October 2009. Historical and current mining estimates provided indicate that 783 acres or 2.4% of the watershed have been impacted. The addition of this proposal would raise the impact level to nearly 3% of the watershed.

Given the past, present, and proposed future mining activities within the Levisa watershed within Virginia, EPA recommends that the Corps conduct a thorough cumulative effects analysis which includes a detailed presentation of past, present and reasonably foreseeable activities. The analysis should describe the current state of the ecosystem, and consider affects on the ecosystem and human environment including impacts to the subwatershed from filling of streams and potential impacts to private drinking water wells and other drinking water supplies. This analysis should consider, at a minimum, the ecosystem function and habitat, and the effects of the hydrologic modifications to the sub-basin and subwatershed. It should also address the impact of deforestation on water quality, water quantity, and other ecological conditions within the sub-basin and subwatershed. We strongly suggest an approach that would manage and link proposed projects to overall water quality and habitat changes on a sub-basin and subwatershed basis.

Finally, consistent with Executive Order 12898 entitled “Federal Actions to Address

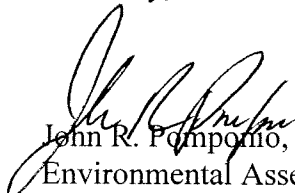
Environmental Justice In Minority Populations and Low-income Populations” and the accompanying Presidential Memorandum, EPA recommends that the Corps’ Section 404(b)(1) Guidelines and NEPA reviews analyze the potential for disproportionate effects on low-income or minority populations in the area of Convict Hollow East. Specifically, a characterization of the economic status of residents near the site and the conditions they face including any effects relating to the proximity of the blasting zone, locations of discharges of fill material, truck traffic, noise, fugitive dust, and habitat loss needs to be conducted. Additional information is also needed concerning sources of drinking water for the affected populations (including municipal water supplies and private sources of drinking water such as streams or private wells). EPA also recommends that you take steps to ensure meaningful engagement of affected communities.

Conclusion

EPA believes that the project as currently proposed may not comply with the Section 404(b)(1) Guidelines, that the project may adversely affect water quality and result in significant degradation to the aquatic ecosystem, and that efforts need to be considered to address such impacts. In light of these concerns, EPA believes that the project may result in substantial and unacceptable impacts to aquatic resources of national importance, as covered in Part IV, paragraph 3(a), of the 1992 Clean Water Act Section 404(q) Memorandum of Agreement between the Environmental Protection Agency and the Department of the Army. In addition, based on the information available to EPA, is not clear that the mitigation proposal, as currently drafted, would serve as a basis for supporting a Finding of No Significant Impact.

Thank you for the opportunity to provide comments on the proposed Convict Hollow East Surface Mine. Should you have any questions please feel free to contact Mark Douglas at 215-814-2767 or by email at douglas.mark@epa.gov.

Sincerely,


John R. Pomponio, Director
Environmental Assessment and Innovation Division

