

US EPA ARCHIVE DOCUMENT



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

April 3, 2009

Colonel Dana R. Hurst  
District Engineer  
Huntington District  
U.S. Army Corps of Engineers  
502 Eighth Street  
Huntington, West Virginia 25701-2070

Re: PN 2003-00238 Alex Energy Inc; Republic No. 1 Surface Mine  
Kanawha County, West Virginia

Dear Colonel Hurst:

The U.S. Environmental Protection Agency (EPA) has reviewed the public notice for Alex Energy's proposed surface mining project involving the discharges of fill material into approximately 10,914 linear feet (approximately 2 miles) of waters of the United States in conjunction with the construction, operation, and reclamation of the Republic No. 1 surface mine.

The proposal includes the construction of three permanent valley fills, three sediment control structures, and one mine-through area. Construction of the proposed in-stream sediment ponds would impact 1,025 linear feet (0.2 miles) of intermittent stream channels. Construction of the proposed valley fills will result in the permanent direct discharge of fill material into approximately 7,564 linear feet (1.4 miles) of intermittent stream channels and 2,352 linear feet (0.4 mile) of ephemeral stream channel, including the mine-through areas. The applicant has submitted a compensatory mitigation plan which includes the creation of approximately 11,000 linear feet of jurisdictional channels, development of a system for acid mine drainage seeps using a treatment wetland to enhance water quality for approximately 10,000 linear feet of Fifteenmile fork and Cabin Creek, and restore 1,025 of stream channels.

This project is proposed within unnamed tributaries to Long Branch and unnamed tributaries to and within Abbot Creek watershed. Abbot Creek drains to Fifteenmile Fork which flows into Cabin Creek. Both Abbot Creek and Fifteenmile Fork are listed on the State's 303(d) list for aluminum, iron, manganese, and pH. Cabin Creek is also listed as impaired and has a developed and approved TMDL for aluminum, iron, CNA, fecal, manganese, iron and pH. Recent aerial photographs and topographic maps indicate previous mining in the area; however, the headwaters of the proposed fills are currently forested. Lower Abbot Creek and Fifteenmile Fork have high specific conductance values (>1000 uS/cm), however, the headwater stream that valley fill no. 1 is proposed in is very dilute (<500 uS/cm) and represents the only remaining stream left in the watershed with good water quality.



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These downstream systems are impaired and therefore it is important to protect these forested headwater streams in the project area so as to continue to offer clean, freshwater dilution to downstream receiving waters to maintain the overall health and vitality of the larger watershed. Headwater streams are vital components of the ecosystem. These ephemeral and intermittent streams collectively provide high levels of water quality and quantity, sediment control, nutrients, and organic matter, and as a result, are largely responsible for maintaining the quality of downstream riverine systems. Even though ephemeral and intermittent streams may go dry during a portion of the year, they continue to provide habitat for macroinvertebrates and amphibians that utilize the interstitial water flows in the substrate below the stream. Such aquatic resources have been significantly impacted by mining in Southern West Virginia.

The Clean Water Act Section 404(b)(1) Guidelines provide the substantive environmental criteria upon which permit decisions are to be based. A fundamental precept of the Guidelines is that dredged or fill material should not be discharged into the aquatic ecosystem unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact either individually or in combination with known and/or probable impact of other activities affecting the ecosystems of concern. The Guidelines also clearly state that alternatives are presumed available for activities that are not required by their nature to be located in aquatic systems, including jurisdictional wetlands [40 CFR 230.10(a)(3)]. Only the least environmentally damaging practicable alternative (LEDPA) can be permitted and in order to identify the LEDPA, the applicant's alternatives analysis must examine a full range of alternatives that would avoid and minimize impacts to the maximum extent practicable. Our review of the public notice indicates that the demonstrations required by the Guidelines have not yet been met.

Given past, present, and potential future mining in the area, the loss of these aquatic and forest habitats cumulatively is a significant concern. Cumulative impacts are required to be considered in the 404(b)(1) Guidelines analysis. The Guidelines require an analysis to determine if significant degradation of the aquatic ecosystem will occur, with special emphasis on the persistence and permanence of effects, both individually and cumulatively. The most current science and data provides that evidence.

EPA Region III continues to extensively investigate downstream effects of surface mining and associated valley fills. These published findings 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. EPA's findings confirm earlier studies that surface mining impacts on aquatic life are strongly correlated with ionic strength in the Central Appalachians. In EPA's dataset, all streams below mined sites with a specific conductance greater than 500 $\mu$ S/cm were impaired using a genus-level multi-metric index (GLIMPSS). Undisturbed streams in the Central Appalachians are naturally very dilute, with background conductivities generally less than 75  $\mu$ S/cm. Downstream of mine sites, specific conductance and component ions can be elevated 20 to 30 times over the background levels observed at un-mined sites. This increase in conductivity impairs aquatic life use and is persistent over time, which cannot be easily mitigated or removed from stream channels. Given the existing impaired streams in the project area, this proposed project has the potential to add to the miles of impaired streams in this watershed.



EPA's study indicates that the severity of the biological impairment rises to the level of an excursion of water quality standards (WQS) when States or EPA use biological data to interpret narrative standards. In West Virginia, the narrative WQS reads, "... no significant adverse impact to the chemical, physical, hydrologic, or biological components of aquatic ecosystems shall be allowed". The CWA Section 404(b)(1) Guidelines at 230.10(b) state that "no discharge of dredged or fill material shall be permitted if it (1) Causes or contributes, after consideration of disposal site dilution and dispersion, to violation of any applicable State water quality standard..." EPA has long recognized that biological assessments provide a useful means of ascertaining consistency with water quality standards because they represent a direct measure of attainment of the aquatic life use. In July 1991, EPA transmitted final national policy on the integration of biological, chemical and toxicological data in water quality assessments. According to this policy, referred to as "Independent Application," indication of impairment of water quality standards by any one of the three types of monitoring data should be taken as evidence of impairment regardless of the finding of the other types of data. This policy continues to the present. *See, e.g., Guidance for 2006 Assessment, Listing, and Reporting Requirements Pursuant to Sections 303(d), 305(b), and 314 of the Clean Water Act.* It is also consistent with West Virginia's use of biological data to support determinations of water quality impairments.

EPA's findings also establish that there is significant degradation of the waters of the United States and a violation of the antidegradation policy, which is part of the water quality standards [40 C.F.R. 131.12(a)(1)]. EPA has interpreted the antidegradation policy as not precluding physical modifications otherwise authorized pursuant to Section 404, provided the discharge does not result in "significant degradation" to the aquatic ecosystem as defined under section 230.10(c) of the Guidelines [*See EPA, Water Quality Standards Handbook: Second Edition, Section 4.4.3 (August 1994)*]. The Section 404(b)(1) Guidelines define significant degradation as including, among other things, significant adverse effects "on life stages of aquatic life and other wildlife dependent on aquatic ecosystems, including the transfer, concentration, and spread of pollutants or their byproducts outside of the disposal site through biological, physical, and chemical process."

In light of the above information, EPA believes that the evidence shows these activities are likely to cause or contribute to an excursion of water quality standards. The CWA Section 404 permit evaluation must ensure that these excursions will not occur and that the cumulative impacts from past, present, and future mines will not have detrimental effects to the watershed and the human environment. As such, EPA believes that additional avoidance and minimization efforts must be considered to reduce the adverse impacts of this proposal. All alternatives which avoid and minimize impacts to waters of the U.S., as outlined above, must be considered and evaluated. EPA is committed to working with the applicant to identify opportunities to re-design and re-engineer the mine to develop the least environmentally damaging practicable alternative.

According to the Guidelines, when it has been determined that impacts are unavoidable, only then can compensatory mitigation be considered. EPA believes it is premature to consider mitigation options but since the public notice addresses a conceptual plan, comments on the plan are offered. The plan is inadequate to fully compensate for lost functions of the aquatic ecosystem and will not be able to return aquatic life uses downstream. The enhancement of downstream channels does not adequately replace the functions of aquatic resources affected by the direct loss of the headwaters streams. Use of constructed sediment ditches to comply with SMCRA and NPDES requirements as stream channels post reclamation is also a concern. These

channels are designed to carry polluted waters during active mining. These constructed channels even after reclamation will not provide clean, freshwater dilution to the watershed, which is so essential to the overall health of those receiving waters. It has not been demonstrated that the mitigation of headwater streams at these sites are adequately constructed to provide the functions of natural headwater streams, therefore incurring a loss of aquatic functions which can not be adequately restored or replaced.

EPA welcomes the opportunity to meet with you and discuss this project in detail where we can provide further comments regarding the applicant's submitted supporting documentation including the Environmental Information Document and submitted Compensatory Mitigation Plan. EPA believes that further avoidance and minimization efforts are needed, that the proposed project is likely to cause or contribute to an excursion from the State's water quality standards downstream resulting in an impairment of the aquatic life use, and that the direct and cumulative impacts from this proposal as well as past and future mines will be persistent and permanent and cannot be sufficiently or effectively compensated through the proposed mitigation. In light of these concerns, EPA believes that the project, as proposed and without further modifications, may not comply with the section 404(b)(1) Guidelines and may result in substantial and unacceptable impacts to Aquatic Resources of National Importance.

Thank you for the opportunity to provide comments regarding this proposal. Should you have any questions please feel free to contact Ms. Jessica Martinsen at 215-814-5144 or by email at [martinsen.jessica@epa.gov](mailto:martinsen.jessica@epa.gov).

Sincerely,



John R. Pomponio, Director  
Environmental Assessment and Innovation Division



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