



United States Department of the Interior



OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT

Charleston Field Office
1027 Virginia Street, East
Charleston, West Virginia 25301

JUN 17 2014

Robert D. Rice, Chief
Office of Abandoned Mine Lands
and Reclamation
West Virginia Department of
Environmental Protection
601 57th Street
Charleston, West Virginia 25304

Dear Mr. Rice:

Please find enclosed the final version of the Water Supply Eligibility Oversight Report. Your June 11, 2014, letter providing comments concerning the report, along with our disposition of your comments is attached. We look forward to working with you to develop appropriate guidelines and procedures for future water supply projects and to address the current revisions needed to allow eligible water supply projects to be constructed.

If you have any questions, please contact me at (304) 347-7158.

Sincerely,

Roger W. Calhoun, Director
Charleston Field Office

Enclosure

Office of Surface Mining Reclamation and Enforcement
2014 Water Supply Eligibility Oversight Report

Prepared by the
U.S. Department of the Interior
Office of Surface Mining Reclamation and Enforcement
Charleston Field Office
Charleston, West Virginia
June 17, 2014



2014 Water Supply Eligibility Oversight Report

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Attachment 1: Sample Waterline Feasibility Study Work Directives

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- West Virginia Department of Environmental Protection Comments
- Office of Surface Mining Reclamation and Enforcement’s Response to West Virginia Department of Environmental Protection’s Comments

**Office of Surface Mining Reclamation and Enforcement
2014 Water Supply Eligibility Oversight Report
West Virginia**

- I. **Program Topic:** This is an oversight review of the West Virginia Department of Environmental Protection's Office of Abandoned Mine Lands and Reclamation (OAMLR) Waterline Project evaluation process. The review is focused on the process used by OAMLR to determine if a water supply (waterline project) is predominately affected by pre-law mining and therefore eligible to be federally funded, and to what extent, with Abandoned Mine Lands (AML) funds.

- II. **Executive Summary:** Applicants, such as Public Service Districts, request assistance from OAMLR if they believe the water supply within their districts has been adversely affected by coal mining that occurred prior to 1977 (pre-law mining). OAMLR hires engineering firms to conduct feasibility studies to make that determination, and if the feasibility studies conclude that the water supply is adversely affected from pre-law mining, OAMLR provides funding to address the problem. OAMLR currently has 40 feasibility studies, representing over \$95 million in project costs that have been determined to be adversely affected by pre-law mining but have not yet been approved for funding by the Office of Surface Mining Reclamation and Enforcement (OSMRE). OSMRE's Charleston Field Office (CHFO) conducted an oversight review of all of those potential projects/feasibility studies and found numerous problems with the lack of documentation and support needed to conclude that the proposed projects are adversely affected by pre-law mining. CHFO is working with OAMLR to address the problems.

- III. **Review Dates:** Review of existing guidelines and the water supply feasibility studies began in March 2014, as soon as the decision to address the water supply eligibility topic was determined. Feasibility studies were reviewed in March and April 2014. No fieldwork was included in the review. Some proposed projects included in the review were initiated many years ago, with the earliest feasibility study initiated in 1999. All feasibility studies included in this oversight are currently being considered for funding by OAMLR.

- IV. **Background:** West Virginia is a rural state and a significant percentage of the population does not currently have access to a public water supply. This is particularly true in the old coal camps and areas with reduced populations. In accordance with the Surface Mining Control and Reclamation Act (SMCRA), CHFO supports the use of AML funding to provide public water to those citizens whose water supplies are adversely affected by pre-law mining. Federal regulations (30 CFR Part 874.14) allow uncertified states to expend AML funds for water supply restoration projects. Prior to 2006, states were allowed to expend 30% of their annual grant to fund waterline projects. An amendment to SMCRA in 2006 removed the 30% funding limitation, allowing the OAMLR program to commit more of the AML funding to waterline projects. The OAMLR program has always partnered with other agencies and funded only the portion of the project that was determined to be AML eligible. When AML funds were limited to 30% of the grant, a large number of proposed waterline projects were waiting until

funding could be obtained from OAMLRL and other partnering sources. Early on, a Water Supply Systems Advisory Committee (Committee) was established and consisted of multiple agencies (e.g. West Virginia (WV) Department of Health, WV Division of Waste and Water Management, WV Development Authority...) involved in water supply funding. That Committee selected projects based on funding availability, readiness to proceed and numerous other factors. The Committee ceased meeting with the elimination of the 30% funding cap since funding was no longer considered an issue. Since that time, the number and size of the AML water supply projects increased. Shortly after the 30% AML funding cap was removed, the WV governor announced in his State-of-the-State address that millions of dollars in new water supply projects would be initiated.

Prior to the OAMLRL program spending money on project construction for any project, including water supply, they must obtain an Authorization to Proceed (ATP) from OSMRE. Due to the large number of funding partners and the difficulties in developing a water supply system project, it is common for water supply projects to be in the planning stage for five to ten years. Many of the water supply projects submitted to OSMRE for an ATP have been in the design and development stage for many years before OSMRE is tasked with review and approval of the project. The proposed projects have financial commitments from numerous other funding partners, but rely on the AML funding contribution for the project to take place. The OAMLRL program hires consulting engineering firms (consultants) to conduct a feasible study of a proposed project area to determine the percent of the residences/structures that are adversely affected by abandoned mines. Consequently, OAMLRL will fund the percentage of the project that the consultant determined to be adversely impacted by pre-law mining.

Waterlines are approved for funding by OSMRE using the same simplified grant procedures as all other AML reclamation-type projects. Once the design, realty work, environmental planning, and eligibility determination is completed, an ATP request is submitted to OSMRE, including the information required to meet the National Environmental Policy Act (NEPA) and an eligibility determination finding that the proposed project is eligible under 30 CFR 874.12. Additional information on the project site, including the proposed design and the feasibility study, is not included in the ATP request.

Program oversight reviews are periodically conducted by OSMRE on a variety of topics to ensure that the State is meeting the requirements of SMCRA. OSMRE has never conducted an oversight review of waterline projects. A review of water supply projects has been included as a high priority in the OSMRE/OAMLRL Performance Agreements yearly since 2010. However, other program demands had prevented the oversight study from being implemented until this year.

- V. **Review Scope and Methodology:** The population for the study included all proposed projects where feasibility studies had determined that the area's water supply had been adversely impacted by pre-law mining, but the proposed project had not been issued an ATP. The entire population of water supply projects (40) was included in the study.

Initially, information was gathered on existing regulations and procedures for a comparative review of each feasibility study provided by the WVDEP. The feasibility studies were evaluated to determine if the studies met the requirements of the current regulations and policies.

A. Existing Regulations, Guidelines, and Policies:

The federal regulations discuss waterlines in 30 CFR 874.14 Water Supply Restoration. Briefly, this section provides the following:

- Water supply restoration projects are those that protect, repair, replace, construct, or enhance facilities related to water supplies, including water distribution facilities and treatment plants that have been adversely affected by coal mining practices.
- Specific funding types (state/tribal share, historic coal, and prior balance replacement funds) are eligible for use on water supply projects.
- For funds awarded before December 20, 2006, up to 30% of the funds distributed to an uncertified state could be spent for water supply projects.
- If the adverse effect on water supplies occurred both prior to and after August 3, 1977, the project shall remain eligible, notwithstanding the eligibility requirement of 30 CFR 874.12(b), if the State finds in writing, as part of its eligibility opinion, that such adverse effects are due predominately to the effects of mining processes undertaken and abandoned prior to those dates.
- Enhancement of facilities or utilities shall include upgrading necessary to meet any local, State, or Federal public health or safety requirement, and shall not include service area expansion not necessary to address a specific abandoned mine land problem.

The specific authority to utilize AML funds for water supply projects was authorized in the November 1990 amendments to SMCRA, and further amended on October 24, 1992, as part of the Energy Policy Act. There is information in the preamble of the May 31, 1994 Federal Register that discusses the comments submitted during the draft rulemaking period and further explains the reasons for writing the rules as written. During the rulemaking, OSMRE had proposed additional requirements for enhancement of water facilities, including a requirement for obtaining alternative funding sources, identifying an urgent need to undertake the project (thereby making it a high priority project), and requiring the State to demonstrate that the enhancement is necessary to achieve the objectives set forth in Title IV of SMCRA. However, the additional requirements concerning the alternative funding and the documentation that the water supply project be an urgent need were not approved, based on the States and Tribes "exclusive responsibility to administer their AML program... in an efficient manner and to carefully consider all expenditures". The preamble does provide some guidance in limiting enhancement. It specifically mentions that States are not allowed to use AML funds to extend water systems to an area or town not adversely affected by the AML problem.

OSMRE does not have any current directives, policies, or procedures providing guidance on waterlines. AML-8, AML Funding Policy for Water Systems was established on May 8, 1987, and was rescinded on July 7, 1988. Directive GMT-10-17, the Federal Assistance Manual (FAM) briefly discusses water supply under 4-100-70, but provides little additional information. Section 4-100-70 C outlines the standard eligibility requirements, but goes on to clarify that the adverse effects of coal mining practices need not have occurred entirely within these periods so long as the State or Tribe determines that they occurred predominantly in these periods.

West Virginia also does not have specific policies or guidelines for addressing waterline selection and eligibility. West Virginia Code §22-2-4(b)(2)(A) and (B) allow for the use of 30% of the AML fund to be used for water supply and provides no additional or different information than the federal requirements. The WVDEP has no additional policies or guidelines for evaluation or selection of AML waterline projects. WVDEP does have a subgrant process to award and distribute funds to local agencies, and a procedure has been developed for the subgrant process, but that process is not a part of the selection, development, or eligibility determination of the waterline project.

Since the funding cap was lifted in late 2006, WVDEP has funded any waterline project that has been determined to be at least 50% affected by pre-law mining, based on the recommendations of a feasibility study. The procedure currently used to initiate a proposed water supply project is discussed below:

B. OAMLR Procedures Previously and Currently Used in Developing a Waterline Project:

OAMLR manages a website that contains an Application for Assistance, allowing an applicant, group, or Public Service District to request assistance from OAMLR if they believe they are experiencing water supply problems attributed to abandoned mines. When an application is submitted, OAMLR then issues a work directive to a consultant to determine if the area has been affected by pre-law mining activities and to compile information and documentation to support a grant request to extend or install water systems in the area.

The content of the work directives have changed over the years, but there are many similar requirements in the various versions. A 1999 work directive reviewed during this study was less detailed than those reviewed from the early 2000's, and the work directive changed again after the reauthorization of SMCRA, which removed the 30% cap for waterline funding. Examples of work directives over the years are included under Attachment 1, but the objective of all the work directives is similar, that is: to investigate the area's current water supply and make a determination whether pre-law mining has affected the water supply to these areas. The work directives are set up in phases.

- Phase I is designed to gather sufficient information to discuss whether to proceed with a more detailed investigation, based on the probability that pre-law mining could have affected the water supply.

- Phase II supplements the information from Phase I, and makes a determination on the percentage of water supplies (primarily residences) affected by pre-law mining. Phase II also requires a feasible alternative to mitigate (provide alternative sources for the affected water supply) with cost estimates.

Phase I: Most items required in the Phase I work directive are similar throughout the years, including a field reconnaissance, examination of the study/impact area, with attention to mining and mine drainage, hydrogeologic characteristics, and other conditions that might provide insight into the nature of the problem. Although written differently, all the work directives require the submittal of maps to show the study/impact area, locations of mining, water sample locations, and geology (minable coal seams). All work directives over the years have also included the requirement to interview the residents as part of the investigation. The interview form has not changed over the years, but the number of interviews required varies. All work directives also have a requirement to submit the preliminary report to document the findings.

Although many items in the various work directives were similar over the years, a major change occurred in the services required in 2008, after the AML reauthorization. The older work directives required the consultants to “*Perform field water tests at various locations in and surrounding the study area to obtain current water quality data for both surface and groundwater. These tests should include pH, aluminum, iron, IDS/Specific Conductivity, temperature, and estimated flow.*” Older work directives also required “*water tests as previously mentioned on samples of these resident’s water sources.*” No guidance was provided for the number of samples or sample locations.

Since 2008, work directives for the Phase I preliminary investigations are more specific concerning the water sampling requirements. The currently used work directives require:

“Summary and Raw Data of Laboratory Water Samples on Customers’ Sources. Parameters to include calcium (ppm) magnesium (ppm), sodium (ppm), total aluminum (ppm), potassium (ppm), total iron (ppm), total manganese (ppm), pH, specific conductivity (umhos/cm), hot acidity (mg/l), alkalinity (mg/l), chloride (ppm), sulfates (ppm), nitrates (ppm), phosphates (ppm), bicarbonate alkalinity (mg/l), carbonate (mg/l), turbidity (ntu), and lead (ppm) specifically identified. The target for the number of samples will be 5% of potential customers, as needed, based on potential mining impact. Coordinate with OAMLR to pick an acceptable ambient sample. Plot the samples on the Piper Diagram, and include a copy of the calculations.”

Although detailed requirements are established for sample parameters on the residents’ water supply, no sampling or lab analysis is required of the surface or ground water, including the mine drainage or other potential sources of contamination to the water supply in the current work directives. The updated work directive requires the selection of an acceptable “ambient sample”, and further requires that the samples be plotted on a Piper diagram. No definition or guidance is provided on locating or identifying the ambient sample.

Another change in the more recent work directives for Phase I is an additional discussion on subsidence and quantity issues. Recent work directives require the consultant to include a brief conclusion in reference to the probability that pre-law mining could have impacted the water supply, along with their recommendation on whether to go forward with a Phase II. This information was not included in the pre-2008 work directives.

Phase II pre-2008 Work Directives: Changes also occurred in the work directives for the Phase II work. The older Phase I work directives requested minimal parameters and a “representative sample” for water testing and residential interviews. Early Phase II work directives required more extensive sampling, (similar to the sampling parameters listed above in the Phase I requirements of the post 2008 recent work directives). It also required personal interviews with “as many residents and local businesses as possible within the study area”. Phase II of the pre-2008 work directives also required a complete mining history with a comparison of pre-law and post-law mining history. The older work directives specifically required the Engineer to determine the relationship of AML to water quality problems and determine if groundwater from the AML sites has affected individual wells or water supplies.

Phase II Current Work Directives: The post-2008 work directives have simple requirements for Phase II work, requiring only that the consultants provide additional sampling and plotting of the samples on a Piper diagram. Deliverables include the updated results for the information obtained in Phase I, with a cover letter to briefly summarize the findings and conclusions, including the extent to which pre-law mining has affected the water supply within the Study Area. Many, but not all, of the post 2008 work directives require an Executive Summary to include summary, conclusions, maps of the study area and original application. The post 2008 work directives require all reports (Phase I, Phase II (Final Report) and Executive Summary to be signed by a Registered Professional Engineer.

Based on the information obtained in the feasibility study, the OAMLR program notifies the Applicant of their commitment to fund a percentage of the project. The amount of funding OAMLR contributes to the project is based upon the percentage of water supplies (such as wells or springs) determined to be adversely affected by pre-law mining within the study area. If the project is not determined to be 100% AML affected, the Applicant continues to locate other funding partners and continues to work with OAMLR to initiate a project to supply water to the study area. Once the funding is obtained, the project design is completed, and all realty issues are resolved, OAMLR only then submits an ATP request to OSMRE, including a standard eligibility determination and the required NEPA documents.

C. Analysis of Feasibility Studies:

As mentioned above, the work directives include a preliminary report, Phase II report, and sometimes a summary report for each proposed project. During this oversight study, OSMRE reviewed various phases of the feasibility studies for each of the 40 proposed water supply projects. Feasibility studies varied greatly in the information provided. A

summary sheet providing specific information on each feasibility study is provided (Attachment 2). In addition, an overview of the feasibility studies is included in the Findings and Conclusions section of this report.

VI. Findings and Conclusions: A review of the waterline application list found on OAMLR's internal database (WebAML) showed 172 waterline projects. Of that project listing, nine were eliminated because they were duplicates of other projects. Of the 163 remaining, 18 (11%) did not provide a project status or were new entries; 39 (24%) were determined eligible by the feasibility studies; 44 (27%) have been constructed or were being constructed, and 62 (38%) were found to be ineligible. OSMRE only reviewed those projects determined to be eligible by the feasibility studies but had not obtained OSMRE approval.

A. Problems Identified:

- 1. Feasibility studies do not provide sufficient documentation for project approval.** Determining project eligibility for any type of AML project requires verification that the problem is predominately caused by pre-law mining operations. Determining if the problem is mining related is often difficult. In situations such as landslides, it is common to use a Piper diagram to evaluate if the source drainage influencing the landslide originates from a mining operation. Mine drainage frequently has characteristics associated with the coal seam that can be identified with chemical analysis, such as high sulfates, elevated iron, aluminum or manganese levels, and low pH. It is common to find significantly lower levels of metals or sulfates in the well, stream, and groundwater samples than the mine water source, and the Piper diagram can help with the comparison of the different water samples.

In the review of the feasibility studies, OSMRE found that the majority of the water well samples in the study area did not have significant increases in the typical parameters specific to, or at least associated with coal mining, but did find slightly elevated levels of many of the mine water characteristics. As mentioned above, the consultants were directed to sample a percentage of the residence's wells and compare those samples to an ambient well utilizing a Piper diagram. Based solely on the consultant's interpretation of the Piper diagrams, samples were determined to be mining influenced or not mining influenced. OSMRE does not agree that the comparison of a resident's well to water from an ambient well is sufficient to show that the water supply is affected by mining. Consequently, OSMRE has not provided funding approval of those projects that did not show that the adverse effects to the well could be attributed to the pre-law mining operation. CHFO is working with OAMLR to identify additional documentation needed to support the funding requests.

The feasibility study also determines the amount of AML funding provided for a water supply project, based on the percentage of well water samples found to be mining influenced compared to the total number of well water samples taken. For example, if sixteen residential wells were sampled and twelve were determined to

be mining impacted based on the consultant's Piper diagram interpretation, the project would be considered 75% eligible for funding by the OAMLR program. Consequently, if 300 wells were located in the proposed study area, the feasibility study would assume that 225 of the wells would be AML influenced, although only 12 were actually sampled and found to be AML impacted. All of the 300 residents would be provided with water, and OAMLR would contribute 75 % of the total cost of the project, again based on only sixteen sampled wells, with twelve affected by the AML problem. The work directives provided a target for the number of samples to be taken (in most cases, it was 5% of the potential customers in the study area in both phases of the feasibility study). The oversight review did not find any intentional manipulation of the data, but the methodology used in the feasibility studies often allows the proposed waterline to be extended into locations, which may be outside of the mining influenced areas. OSMRE has not provided funding approval of those portions of proposed projects that appear to be located outside of pre-law mining areas and is working with OAMLR to identify those areas to be eliminated or where additional documentation is needed to support the funding requests.

As discussed above, the feasibility studies primarily utilized the Piper diagrams to document the adverse impacts to the water quality, but little information was provided to document quantity loss due to mining, with the exception of interviews. Work directives require interviews to be conducted with potential customers, and a standard interview form is utilized, including discussions concerning water supply sufficiency and changes in water quantity over the years. Information documenting site-specific fractures, cracks, subsidence, or other evidence showing that mining has affected the groundwater flow is not often provided. Most of the feasibility studies claiming the adverse impact to the water supply is due to water quantity issues did not provide sufficient narrative to justify the claim.

2. An additional concern identified during the study involved **the timing of OSMRE's approval**. The first feasibility study and work directive reviewed by OSMRE as part of this study identified problems with a lack of information available to correlate the water supply problems to pre-law mining. The seriousness of the problem was intensified by the fact that OAMLR had advised the subgrantees of the likelihood of funding many years prior to the OSMRE review, and hundreds of citizens and numerous other funding agencies were anticipating approval and initiation of the water supply project. The timeliness of OSMRE's involvement in the approval (or rejection) can create serious problems for not only the OAMLR program, but also for the numerous other agencies that are committing funds to the project.

B. Contributing Factors:

1. Another concern involves **the lack of guidance documents** for water supply projects. The federal regulations and guidelines can be summed up into two basic requirements: (1) the water supply must be adversely affected by mining; and (2) the adverse impacts from the mining must be predominately from pre-law mines. Upon

review of the feasibility studies, several issues were identified that relate to the lack of guidance provided by state and federal regulations.

For instance, it would be beneficial to establish proper measures used to define if the water supply being utilized by a resident or a group of residents is being impacted by mining. Guidance on what parameters of water quality must be considered in determining adverse impacts to a water source would also be useful.

Additionally, the lack of guidance allows for much judgment as to how to properly delineate the number of residents within the waterline study area that should benefit from AML funding. Currently, it is common to formulate a percentage of residents impacted based on a relatively small number of water samples and then utilize that finding to represent an entire, and much larger, study area. The review also found that AML monies may be proposed to fund water supply lines that are installed through areas of non-mining related locations to provide service to the much smaller mining-related area outlined in the feasibility study. This practice, which may include proposals for larger diameter waterline and additional appurtenances, such as fire hydrants, valves, etc., could increase the total project costs beyond what might be expected to address the smaller, mining related area.

2. **Staffing within the OAMLR program** is also an issue. A staffing study was conducted in Evaluation Year 2011 that found concerns with OAMLR staff turnover and the limited number of staff for the program size. The review of the OAMLR staff signatures on the work directives indicates the large turnover in OAMLR waterline staff. Over a period of 10 years, at least six individuals have been assigned the authority to approve the work directives as waterline coordinators, waterline administrators, or design administrators. The lack of state and federal written guidance documents and turnover in OAMLR staff makes it extremely difficult for consistent review and approval of water supply projects.
3. Another factor identified in the study was that the required services in the **current work directives do not request the necessary information to meet the objective of the study**, nor the federal requirements. The work directives ask for a conclusion as to pre-law impact but do not specifically require sufficient information to reach that conclusion. OSMRE regulations require that the water supply must be adversely affected by mining. The objective of the feasibility studies is to investigate the area's current water supply and determine whether pre-law mining has affected the water supply to the area. OSMRE does not agree that the comparison of a resident's well to water from an ambient well, even assuming that the ambient well represents unaffected water, can provide evidence that the water supply is affected by mining. Little or no effort was taken to locate mine discharge locations or obtain samples to provide information concerning the quality of the mine drainage in the study area. The current work directives require a "brief conclusion in reference to the probability the pre-law mining could have impacted the water supply" but do not require a discussion explaining how the mine drainage or the pre-law or post law mining activities have actually affected the water supply. Minimal requirements exist in the

work directive to ensure that the number and type of water samples (representing the residents' existing water supply and characterizing the surface and ground water conditions) are adequate to show the various conditions found throughout the proposed project site.

4. Although current **eligibility documents** from the OAMLR program adequately discusses the pre-law aspects of the proposed project, little discussion is given regarding the post law mining. SMCRA allows water supply projects to be conducted even when post law mining influences have contributed to the problem as long as the adverse impacts are predominately pre-law. Federal regulations, 30 CFR 874.14(b), requires additional language to be added to the eligibility document when the adverse effect on water supplies occurred both prior to and after August 3, 1977. The regulations state "the project shall remain eligible, notwithstanding the eligibility requirement of 874.12(b), if the State or Indian tribe finds in writing, as part of its eligibility opinion, that such adverse effects are due predominately to the effects of mining processes undertaken and abandoned prior to those dates". However, the actual language concerning the predominance of pre-law mining is not included in the eligibility opinion.

VII. Corrective Actions: The following actions will be addressed immediately.

1. OAMLR has agreed to address the potential impacts from post law mining as required by 30 CFR 874.14 in the eligibility determinations.
2. OAMLR has agreed to provide AMLIS submittals for OSMRE approval as soon as the Phase I feasibility study is completed, prior to any funding commitments, and revise AMLIS if the Phase II study alters the project proposal. OAMLR has also agreed to provide OSMRE with a copy of all feasibility studies for the next three years as part of the AMLIS submittal approval process. OSMRE will provide written concurrence or comments on the feasibility studies in a timely fashion.
3. OAMLR will no longer provide letters that can be construed as commitment letters without first receiving an authorization to proceed from OSMRE.

The remaining actions will be immediately initiated and completed within six months.

1. OAMLR has agreed to work with CHFO to establish basic guidelines and procedures for determining adverse effects to the water supply and establishing the predominance of pre-law mining impacts such as:
 - Develop representative sample protocol to determine proper impact percentage and establish eligible project areas.
 - Determine proper use of the Piper diagram and include appropriate samples such as mine drainage in the evaluation.
 - Establish proper baseline parameters to determine adverse impact.
 - Establish criteria needed to determine quantity loss.

- Develop requirements for pre and post law mine samples.
 - Develop requirements for stream samples.
 - Require photographic documentation.
 - Establish more accurate delineation of final study area after final feasibility study results.
 - Include summaries and conclusions that are site specific and accurately define adverse impacts and mining related correlations.
2. Establish guidelines for OAMLR funding commitment, including:
- Requests which include potential increased funding to provide fire protection.
 - Extent of funding allowable through non-AML affected areas to reach the AML-eligible problem area.
 - Procedures for determining costs when including customers that are not impacted by mining.
3. OAMLR has agreed to revise work directives provided to consultants to reflect the revised guidelines agreed to between OSMRE and OAMLR.

ATTACHMENT 1



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Ph. (304) 759-0521
Fax 759-0527



West Virginia Division of Environmental Protection

Cecil H. Underwood
Governor

Michael C. Castle
Director

December 9, 1999

Mr. Bill Trimbath, Assistant Vice President
Michael Baker Jr., Inc.
4301 Dutch Ridge Road
Beaver, Pennsylvania 15009

RE: Davy to Roderfield and Premier
Project (ID#210)
Waterline Extension Feasibility Study
WD #14

Dear Mr. Trimbath:

The West Virginia Division of Environmental Protection Water Supply System Advisory Committee has designated an area in McDowell County as a potential waterline extension project. The services of your firm are needed to verify that these areas have been affected by pre-law (prior to August 3, 1977) mining activities and would be valid candidates for funding.

The attached "Application for Assistance" includes location maps which show the areas where assistance is being requested.

A. PREFERRED SCOPE OF WORK

Provide the engineering services necessary to develop a water supply study for the areas mentioned in the attached "Application for Assistance".

The objective of the study will be to investigate the area's current water supply and make determination as to how past mining has actually affected the water supply to these areas.

In addition, compile information and documentation to support an AML & R grant request to OSM for funding to extend and/or install water systems in these impacted areas.

"To use all available resources to protect and restore West Virginia's environment in concert with the needs of present and future generations."



West Virginia
Division of
Environmental Protection

B. SERVICES REQUIRED

1. Preliminary Investigation
 - a. What type of mining activity has affected the areas and when it was mined.
 - b. How the mining activity has affected the groundwater in the area and to what extent.
 - c. Approximately how many residents are affected by this groundwater degradation.
 - d. Determination from preliminary findings on whether or not to proceed with the compiling of supporting information and documentation. Submit a brief report discussing your determination and recommendations. This preliminary report will be due within fifteen (15) days from the issuance of the Notice to Proceed.
2. AML & R Grant – Supporting Documentation
 - a. An Engineer will conduct personal interviews with as many residents and local businesses as possible within the study areas. The interview will be based upon a list of questions developed by the engineer and approved by AML & R.
 - b. The Engineer will conduct a personal interview with officials from local, state and federal agencies to gather information on the water quality of the area.
 - c. After completing and reviewing the interviews, the Engineer will develop and carry out a representative sampling and testing program of the area. An estimated total of fifteen (15) samples will be taken and tested. The tests will be performed for the following parameters: pH, specific conductivity, acidity, alkalinity, calcium, magnesium, sodium, potassium, iron, chloride, sulfate, bicarbonate, fecal coliform, turbidity and lead.

- d. The Engineer will conduct a complete mining history study of the area to determine the sources of the water quality problem. He will develop a comparison of pre-August 3, 1977 and post-August 3, 1977 mining history. Maps will be obtained from State and Federal mining agencies and from coal companies in making the comparison.
- e. After Services "a" through "d" have been completed, the Engineer will determine the relationship of Abandoned Mine Lands to the water quality problem. The Engineer will use the information acquired in Services "a" through "d" in addition to information gathered from an extensive study of geologic and hydrologic data to determine if groundwater from the AML sites has affected individual wells or water supplies.
- f. If the Engineer determines that the water quality problem is AML related, then he will examine and present possible alternative solutions with cost estimates.
- g. The Engineer will develop and prepare exhibits which will include, but not be limited to (1) map of the study area detailing where samples and interviews were taken, (2) geological quadrangles, (3) typical geologic formation cross-sections of the area, (4) typical cross-sections of the groundwater model, (5) regional groundwater flow, (6) pre-August 3, 1977 extents of mining activities i.e. mined out areas and abandoned structures, (7) post-August 3, 1977 mining activities map, (8) data sources map, (9) cross-sectional view and comparison of existing wells and AML-affected coal seams, and (10) photographic documentation of the water quality problem source and its effects.
- h. The Engineer will present in a formal engineering report all information gathered in Services "a" through "g". The Engineer will deliver five (5) copies of the Draft Report which will be completed in approximately sixty (60) days from the issuance of the Notice to Proceed.
- i. After the report is reviewed, the Engineer will address the comments, make changes and submit ten (10) copies of the Final Report to the Office of Abandoned Mine Lands and Reclamation.

Mr. Bill Trimbath, Assistant Vice President
Michael Baker Jr., Inc.
Davy to Roderfield and Premier Project (ID#210)
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December 9, 1999
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- j. Representing the state as project manager for this project will be Mr. Dean Stiltner of the Oak Hill AML & R office. Please contact the project manager at 304-465-1910 to set up an on-site meeting to discuss the site and scope of work prior to submitting your cost proposal.

Please bear in mind that your cost estimate for all services must be based on the submitted cost proposal of your contract. Should you have any questions concerning this directive or the site in question, please contact the project manager.

Sincerely,



John H. Johnston, Chief
Office of Abandoned Mine Lands
and Reclamation

JHJ/cds/crl

Enclosures

cc: Charlie Stover
Dean Stiltner
Claude Straight
File



west virginia department of environmental protection

Division of Land Restoration
Office Abandoned Mine Lands & Reclamation
601 57th St., SE
Charleston, WV 25304-2345
Phone 304-926-0485 / Fax 304-926-0458

Joe Manchin III, Governor
Stephanie R. Timmermeyer, Cabinet Secretary
www.wvdep.org

May 22, 2007

Mr. E. L. Robinson, President
E. L. Robinson Engineering Company
5088 Washington Street, West
Charleston, West Virginia 25313

RE: Morrisvale/Cameo/Big Horse Creek
Feasibility Study (ID#302)

Dear Mr. Robinson:

The West Virginia Department of Environmental Protection Water Supply System Advisory Committee has designated an area in Boone County as a potential waterline extension project. The services of your firm are needed to verify that these areas have been affected by pre-law (prior to August 3, 1977) mining activities and would be valid candidates for funding.

The attached "Application for Assistance" includes location maps which show the areas where assistance is being requested.

I. PREFERRED SCOPE OF WORK

Provide the engineering services necessary to develop a water supply study for the areas mentioned in the attached "Application for Assistance".

The objective of the study will be to investigate the area's current water supply and make determination as to how past mining has actually affected the water supply to these areas.

In addition, compile information and documentation to support an AML & R grant request to OSM for funding to extend and/or install water systems in these impacted areas.

Promoting a healthy environment.

Mr. E. L. Robinson, President
E. L. Robinson Engineering Company
Morrisvale/Cameo/Big Horse Creek Feasibility Study (ID#302)
May 22, 2007
Page 2

II. SERVICES REQUIRED

A. Preliminary Investigation

1. **Field Reconnaissance of the Study Area**
 - a. This should include an initial site review with the applicant and West Virginia Department of Environmental Protection personnel.
 - b. Examination of the study area with particular attention being devoted to the presence of mining and mine drainage, geologic and hydrogeologic characteristics, and any other notable existing conditions which might provide insight into the nature of the applicant's problems.
2. **Review of the Regional and Local Geology**
 - a. This should involve a review of records and literature from the West Virginia Geologic and Economic Survey for this County.
 - b. A review of the Ground Water Hydrology of the area's primary river basin and its tributaries. This map is prepared by the U. S. Geologic Survey in cooperation with the West Virginia Department of Environmental Protection, Office of Water Resources (926-0495).
3. **Field Water Tests**
 - a. Perform field water tests at various locations in and surrounding the study area to obtain current water quality data for both surface and groundwater. These tests should include pH, aluminum, iron, IDS/Specific Conductivity, temperature, and estimated flow.
4. **Resident Interviews**
 - a. Conduct resident interviews with a representative sample of residents within the study area which use wells or springs as their source of water to better define the scope of the problem and to determine how many residents are possibly being impacted by potential mining influence (try to determine if it is by mining, whether it is from current or past mining). Perform water tests as previously mentioned on samples of these resident's water sources.

Mr. E. L. Robinson, President
E. L. Robinson Engineering Company
Morrisvale/Cameo/Big Horse Creek Feasibility Study (ID#302)
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5. Review of Mining Within the Study Area
 - a. Conduct a thorough review of mine maps and quadrangle overlays of mined areas within the study area to determine the extent and the age of the mining. This should involve, but not be limited to, resident interviews, property owner interviews and if possible any local coal companies which may have knowledge of current and past mining in the area.

6. Determination from Preliminary Findings
 - a. This determination should discuss whether or not to proceed with the compiling of supporting information and documentation. Submit a brief report discussing your determination and recommendations. Include as part of this report a Project Site Map, General Geology Map, a Mining Information Map and Water Sample Location Map. Also, include the resident interview information. A copy of a Resident Interview Form is attached for your use. This preliminary report will be due within twenty (20) days from the issuance of the Notice to Proceed.

III. AML & R Grant – Supporting Documentation

- A. An Engineer will conduct personal interviews with as many residents and local businesses as possible within the study areas. The interview will be based upon a list of questions developed by the engineer and approved by AML & R.

- B. The Engineer will conduct a personal interview with officials from local, state and federal agencies to gather information on the water quality of the area.

- C. After completing and reviewing the interviews, the Engineer will develop and carry out a representative sampling and testing program of the area. The tests will be performed for the following parameters: pH, specific conductivity (umhos/cm), hot acidity (mg/1), alkalinity (mg/1), calcium (ppm), magnesium (ppm), sodium (ppm), total aluminum (ppm), potassium (ppm), total iron (ppm), total manganese (ppm), chloride (ppm), sulfates (ppm), bicarbonate alkalinity (mg/1), carbonate (mg/1), total coliform/e. coli, turbidity (ntu) and lead (ppm).

Mr. E. L. Robinson, President
E. L. Robinson Engineering Company
Morrisvale/Cameo/Big Horse Creek Feasibility Study (ID#302)
May 22, 2007
Page 4

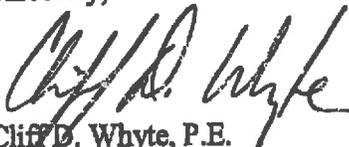
- D. The Engineer will conduct a complete mining history study of the area to determine the sources of the water quality problem. He will develop a comparison of pre-August 3, 1977 and post-August 3, 1977 mining history. Maps will be obtained from State and Federal mining agencies and from coal companies in making the comparison.
- E. After Services "a" through "d" have been completed, the Engineer will determine the relationship of Abandoned Mine Lands to the water quality problem. The Engineer will use the information acquired in Services "a" through "d" in addition to information gathered from an extensive study of geologic and hydrologic data to determine if groundwater from the AML sites has affected individual wells or water supplies.
- F. If the Engineer determines that the water quality problem is AML related (50% or more impact by pre-August 3, 1977 mining), then he will examine and present possible alternative solutions with cost estimates.
- G. The Engineer will develop and prepare exhibits which will include, but not be limited to (1) map of the study area detailing where samples and interviews were taken, (2) geological quadrangles, (3) typical geologic formation cross-sections of the area, (4) typical cross-sections of the groundwater model, (5) regional groundwater flow, (6) pre-August 3, 1977 extents of mining activities i.e. mined out areas and abandoned structures, (7) post-August 3, 1977 mining activities map, (8) data sources map, (9) cross-sectional view and comparison of existing wells and AML-affected coal seams, and (10) photographic documentation of the water quality problem source and its effects.
1. The Cost Proposal is due within 10 days of the site visit. The Engineer will present in a formal engineering report all information gathered in Services "a" through "g". The Engineer will deliver three (3) copies of the Preliminary Report due within 20 days from the issuance of the Notice to Proceed. A Final Report will be due within 60 days from the issuance of the Notice to Proceed.

Mr. E. L. Robinson, President
E. L. Robinson Engineering Company
Morrisvale/Cameo/Big Horse Creek Feasibility Study (ID#302)
May 22, 2007
Page 5

2. After the report is reviewed, the Engineer will address the comments, make changes and submit three (3) copies of the Final Report to the Office of Abandoned Mine Lands and Reclamation. This final report must also be submitted on CD two (2) copies. In addition to the Final Report, submit twelve (12) copies of an "Executive Summary" which shall include an introduction, summary and conclusions, remedial alternatives cost estimate with breakdown of costs, proposed map, and a copy of the original application.
3. Representing the state as project manager for this project will be Mr. Dean Stiltner of the Oak Hill AML & R office. Please contact the project manager at 304-465-1910 to set up an on-site meeting to discuss the site and scope of work prior to submitting your cost proposal.

Upon agreeing on a cost, you will submit the necessary paperwork to obtain a Purchase Order. Should you have any questions concerning this directive or the site in question, please contact the project manager.

Sincerely,


Cliff D. Whyte, P.E.
Design Administrator

CDW/crl

Enclosures

cc: Dean Stiltner
File



west virginia department of environmental protection

Office Abandoned Mine Lands & Reclamation
601 57th St., SE
Charleston, WV 25304-2345
Phone 304-926-0485 / Fax 304-926-0458

Joe Manchin III, Governor
Randy C. Huffman, Cabinet Secretary
www.wvdep.org

October 10, 2008

Craig Richards, PE
Director of Engineering Services
Burgess & Niple
4424 Emerson Avenue
Parkersburg, WV 26104

RE: Bolair/Cowen/Flatwoods
Webster Co. Commission
Feasibility Study (ID#329)

Dear Mr. Richards:

The West Virginia Department of Environmental Protection Office of Abandoned Mine Lands & Reclamation (AML) has designated an area in Webster County as a potential waterline extension project. The services of your firm are needed to verify whether this area has been affected by pre-law (prior to August 3, 1977) mining activities and would be a valid candidate for funding.

The attached "Application for Assistance" includes a location map which shows the area where assistance is being requested.

I. PREFERRED SCOPE OF WORK – Revised 10/08/08

Provide the engineering services necessary to develop a water supply study for the area mentioned in the attached "Application for Assistance".

The objective of the study is to investigate the area's current water supply and determine whether pre-law mining has affected the water supply to this area.

In addition, if pre-law mining has potentially affected the water supply in the area, compile information and documentation to support an AML&R grant request to the US Office of Surface Mining Reclamation and Enforcement for funding to extend and/or install water facilities in the area.

SERVICES REQUIRED – Revised 10/08/08

1. Preliminary Investigation (Phase I)

- a. **Field Reconnaissance of the Study Area**
 - i. Initial site review with the applicant and AML to agree upon and document the Study Area, based on the Application for Assistance. The Study Area will be defined by the applicant and will be the area that includes the potentially affected residences and businesses to be evaluated during the study. The Impact Area will be defined by the Engineer, and will be the area that includes the Study Area, as well as any surrounding areas that may potentially impact the Study Area, such as nearby mines and drainage areas.
 - ii. Examination of the Impact Area with particular attention being devoted to the presence of mining and mine drainage, geologic and hydrogeologic characteristics, and any other notable existing conditions which might provide insight into the nature of the applicant's problems.

- b. **Services Required for the Following Deliverables (1 Bound Hard Copy, 1 CD)**
 - i. Map showing Study Area, Impact Area, Resident/Business IDs, Sample Locations, Interview Locations, and Movable Coal Seams within the Impact Area
 - ii. Map showing Study Area, Impact Area, Pre- and Post-Law Mining (differentiated by color, or symbol, etc.) with a Chart identifying the mining details (date, owner, permit #, etc.)
 - iii. Summary and Raw Data of Laboratory Water Samples on Customers' Sources. Parameters to include calcium (ppm), magnesium (ppm), sodium (ppm), total aluminum (ppm), potassium (ppm), total iron (ppm), total manganese (ppm), pH, specific conductivity (umhos/cm), hot acidity (mg/l), alkalinity (mg/l), chloride (ppm), sulfates (ppm), nitrates (ppm), phosphates (ppm), bicarbonate alkalinity (mg/l), carbonate (mg/l), total coliform/e. coli, turbidity (ntu) and lead (ppm). Plot the samples on the Piper Diagram, and include a copy of the calculations. The target for the number of samples will be 5% of potential customers, as needed, based on potential mining impact. Coordinate with the AML Project Manager to pick an acceptable ambient sample. Plot the samples on the Piper Diagram, and include a copy of the calculations.
 - iv. Summary and Copies of Interviews with Potential Customers. Every customer sampled will be asked to fill out an interview form.
 - v. Cover Letter with a brief discussion of Items 1.b.i thru 1.b.v. Also include a brief discussion on whether or not subsidence or quantity issues exist. Lastly, include a brief conclusion in reference to the probability that Pre-Law mining could have impacted the water supply and recommendation on whether to go forward with Phase II. Cover Letter is to be signed by a Registered Professional Engineer.

2. AML & R – Supporting Documentation (Phase II)

This phase of the report will begin after the Preliminary Findings are approved and a memo is issued from the AML Project Manager to proceed with Phase II.

a. Laboratory Sampling

- i. Coordinate with the AML Project Manager to select additional laboratory sampling locations, based on the Phase I report. Parameters are listed in 1.b.iii. The target percentage will be 5%, however, consideration will be given to Phase I results. Plot the samples with the Phase I samples on the Piper Diagram, and include a copy of the calculations.
- ii. Coordinate with the AML Project Manager to pick an acceptable ambient sample. Plot the samples on the Piper Diagram, and include a copy of the calculations.

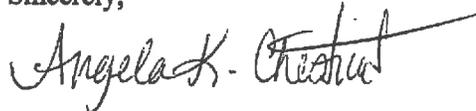
b. Deliverables

- i. Final Report (3 Hard Copies, 3 CD/DVDs with AutoCAD 2007 files)
 1. Items 1.b.i through 1.b.vi, updated to include all results, interviews, research, etc.
 2. Copy of the Application for Assistance
 3. Cover Letter briefly summarizing the findings and conclusions, including the extent to which Pre-Law mining has impacted the water supply within the Study Area. This recommendation will include the percentage of potential customers affected. If the impact is determined to be greater than 50%, the Engineer will coordinate with the Applicant/Sponsor and the AML Project Manager on the preferred scope of work, and any acceptable feasible alternatives to mitigate the impact. Documentation of the coordination should be presented with the report. Include cost estimates for the possible solution(s). The Final Report must be signed by a Registered Professional Engineer.
- ii. Executive Summaries (12 Bound Hard Copies)
 1. Include Summary, Conclusions, Map of the Study Area with Resident/Business IDs, and Original Application. The Executive Summaries must be signed by a Registered Professional Engineer.

Craig Richards, PE, Director of Engineering Services
Burgess & Niple
Bolair/Cowen/Flatwoods Feasibility Study (ID#329)
October 10, 2008
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Please contact me at 304-926-0499 x.1459 within 10 days of receipt of this letter to set up an on-site meeting to discuss the site and scope of work prior to submitting your cost proposal. The Cost Proposal is due within 10 days of the site visit. After your cost proposal is approved by AML, you will submit the necessary paperwork to obtain a Purchase Order. The Preliminary Report is due 20 days after receipt of the Purchase Order and Notice to Proceed. The Final Report is due 25 days after receipt of the memo approving Phase II work.

Sincerely,

A handwritten signature in cursive script that reads "Angela K. Chestnut". The signature is written in black ink and is positioned above the typed name.

Angela K. Chestnut, P.E.
AML Waterline Administrator

Attachments: Sample Resident Interview Form
Application of Assistance

ATTACHMENT 2

FEASIBILITY REVIEW STUDY

	A	B	C	E	F
1	ID	Name	County	Issues Identified & Comments	Corrections Required
2	287	Birch River PSD Anthony Creek Area	Nicholas	Need Phase 2 report. Based on Ph 1 and Summary Report, Rt 82 was found not to be impacted by pre law mining, but was included anyway. Anthony Creek appears to have more post law mining than shown. No Fe results shown on table and individual sample results not provided in Summary Report. Sample id on the Sheet 8 map legend does not indicate source of water (pre or post law drainage). No mining in immediate location of homes - all mining in headwaters of Anthony Creek.	Delete or justify inclusion of Rt 82 area. Re-evaluate post law mining impacts in Anthony Creek. If prelaw mining is predominate, utilize existing samples to support mining impacts or obtain additional samples. Provide missing info on water quality. Discuss flow path of mine water from headwaters to impacted wells on Anthony Creek.
3	320	Birch River PSD Wilson Ridge Area	Clay	Mapping clearly shows pre law underground workings in most areas. Of the 8 samples in the revised study area, only one (sample 7) shows typical mine water chemistry. 50% of the samples in the revised study area meet secondary drinking water standards. Interviews indicate only 2 of 8 had water quality issues (samples 7 & 4).	Need justification for Wilson Ridge road and Hickman road areas. If 4 of 8 samples meet secondary drinking water standards, justify need for project through mine samples, piper plots and discussion.
4	329C	Bolair PSD County Route 42	Webster	Sample data doesn't show an overabundance of mining impact, however, pre law mining impacts can be realized by the large amount of mining in the revised study area.	None. Would be best to have mine sample, but narrative discussion is sufficient for conclusions.

FEASIBILITY REVIEW STUDY

	A	B	C	E	F
1	ID	Name	County	Issues Identified & Comments	Corrections Required
5	302	Boone Co. PSD Morrisvale/Cameo/ Big Horse	Boone	Only one stream sample, but good descriptions in narrative of report to document findings. Big Horse Creek section of proposed waterline still shows on map although study area was revised to exclude this area. Majority of waterline cost is associated with getting water from Rt. 3 to the revised study area. Should this be reevaluated?	Would be best to have mine sample, but narrative discussion is sufficient for conclusions. Remove waterline from Big Horse Creek area. Evaluate cost analysis since waterline includes major supply line expense from Rt. 3. Can AML portion be reduced?
6	329B	Cowen PSD County Route 40	Webster	Additional sampling would be required to tie mine drainage to wells in the study area. Well data does not appear to substantiate mine impact.	Additional sampling and discussion is required to explain mining impacts to wells along Co. Rt. 36/1 before it can be included in the revised study area.
7	376	Cowen PSD Erbacon	Webster	Due to the vast amount of post law mining in the study area and lack of water sampling from both pre and post law mining, it would be difficult to conclude that 60% of the study area is predominately impacted by pre law mining.	Additional sampling of streams and pre and post law discharges to substantiate a 60% impact. Additional discussion to verify the well data is pre law mining influenced. Associate pre law mining to the impacted wells. Provide analysis to show that the post law mining is not the source of the adverse impacts to the water supplies.

FEASIBILITY REVIEW STUDY

	A	B	C	E	F
1	ID	Name	County	Issues Identified & Comments	Corrections Required
8	315	Cowen PSD Dennison Run Area	Webster	Consultant did a good job of eliminating non-mining impacted areas. The remaining area (Area E) needs mine drainage samples. Mining impacts are not well defined. There are two samples in the study area w/interviews. One interview indicates good water and meets secondary drinking water standards. The other indicates iron and sulphur and blasts from active mining can be felt. No mine samples on Piper.	Sample for mine water and provide documentation to associate well impacts to mine water and prove predominance of pre law mining impacts to water supply.
9	319	Craigsville PSD Craigsville/Tioga Area	Nicholas	There are no pre or post law discharge samples, stream samples, etc., to tie any type of mining relatedness to the residential water quality issues. Adjacent stream (Beaver Ck.) is on 303d list and wasn't sampled for comparison to mines or wells. Lick Fork, Horse Run and Paddy Run are included in the study area, however, no mining information is shown on mapping to correlate to well information in this area.	Sampling and analysis to associate well samples to pre law mining. Unless additional justification is provided, reduce study area to eliminate Lick Fork, Horse Run, and Paddy Run. If Beaver Creek is impacting the local groundwater in the study area , it should be discussed.
10	335	Danese PSD Branch Rd.	Smokey Fayette	Shuck well sample originates from a mine and ties into other well data by piper. The majority of the water samples meet secondary drinking water standards. Quantity appears insufficient based on interviews.	Need to analyze and discuss mining impacts relating to the water insufficiency. If water quality is an issue, need to discuss since well samples meet secondary drinking water standards.

FEASIBILITY REVIEW STUDY

	A	B	C	E	F
1	ID	Name	County	Issues Identified & Comments	Corrections Required
11	335-2	Danese PSD Crickmer Rd.	Fayette	Most samples are over the secondary drinking water standards. Quantity does not appear to be an issue. Impacted wells need to be associated with pre law mining.	Additional justification by mine sampling and analysis to prove that this area is being predominately impacted by pre law mining and to what proper percent impact.
12	335-1	Danese PSD Highland Mt. Area	Fayette	No mine samples to compare to test results. Although several well samples do not meet secondary standards, there is no discussion on well depth vs. mined seam depth and if this is having an impact on the wells. There is no sampling in the majority of the study area (between Sample 13 and Chestnut Knob.	Additional justification by mine sampling and/or analysis to prove that this area is being predominately impacted by pre law mining. Justify AML funding of the waterline in the area between Sample 13 and Chestnut Knob.
13	322	Danese PSD Russellville-Ponderosa & Loops	Fayette	There is not sufficient evidence to support that pre law mining has degraded water quality in the Ponderosa study area. No mining in most of the area.	Prove that pre law mining has predominately impacted the wells in the study area. Need more evidence (photos, discussion) to support.
14	338-1	Eastern Wyoming PSD Barkers Ridge Phase I	Wyoming	Need additional discussion concerning any post law impacts in the study area. The provided mapping shows 7 of 16 sample locations within post law underground mine limits. Area between WL 7 and WL 10 needs more information to be tied to pre law mining.	Additional information is required to document if the impact to the water supply is from pre or post law mining. Additional mine sampling and comparison to wells to verify pre law mining relatedness is required.

FEASIBILITY REVIEW STUDY

	A	B	C	E	F
1	ID	Name	County	Issues Identified & Comments	Corrections Required
15	338-2	Eastern Wyoming PSD Barkers Ridge Phase II	Wyoming	Include with 338-1	Include with 338-1
16	401	Eastern Wyoming PSD Beartown Area	Wyoming	Only one groundwater sample taken, but it was not included because there were no complaints with it. Other samples were from springs and a cistern. Water quality is not an issue based on interviews and samples. No site specific info on quantity. The report also added in area from Clarks Gap that was previously determined not be predominately impacted by pre law mining.	Need info specific to project area to support quantity loss due to subsidence. Better narrative to support pre law mining induced water loss. If quality is an issue, obtain samples of mine water to support, and justify why none interviewed (nor the sampling) indicated that it was. Extend interviews and samples in area between EW 3 and EW8 to justify funding in this area. Justify the inclusion of the Clarks Gap area into this current study area.
17	284	Eastern Wyoming PSD Clarks Gap Comm.	Wyoming	Preliminary report found this area to be not predominately related to pre law mining, but a later report (401) indicates the project is to be addressed by AML.	Provide all necessary info to support the reversal of the previously submitted report.
18	339	Eastern Wyoming PSD Herndon/Covel/Garwood	Wyoming	Quality not an issue. Except for HCG-10, all mining related parameters are within the secondary drinking water standards. Feasibility study states that abandoned mines are enhancing the groundwater in the study area.	Provide info to support an adverse impact to the water supply due to mining. Explain the need of AML participation in the funding of the entire length of the proposed line if Covel is the only area found to mining related.

FEASIBILITY REVIEW STUDY

	A	B	C	E	F
1	ID	Name	County	Issues Identified & Comments	Corrections Required
19	337	Eastern Wyoming PSD Otsego/Pierpoint/Maben	Wyoming	Feasibility study maps shows no post law mining. Sampled mine water meets secondary drinking water standards. Proposed waterline map in Section 2 shows line connector from Mullens to study area. Should study area be extended to determine percent eligibility. No sampling in the Right Fork area of study limits.	Provide mapping to show post law mining. Provide additional sampling and analysis to verify pre law mining predominance and percent impact throughout the study area. Proposed waterline map in Section 2 of the report shows service line from Mullens to study area. Should study area be extended to determine percent eligibility in this area also?
20	326	Glen White-Trap Hill PSD	Raleigh	Maps do not adequately confirm presence of mining in the study area. Conclusions provide no evidence or discussion about how or why determinations were made to support quantity loss. Sample PI-13 appears to have the worst quality, but is not near pre law mining.	Mapping does not substantiate pre law mining in the study areas. Discuss quantity loss, if any. Need to justify what mining has affected those areas that are not undermined (areas 326-A, most of 326 and 345). Need documentation and sampling to outline impacts to water supplies that are shown outside of the mined area limits.
21	361	Kanawha Co. RDA Coalburg Area - Rt. 61	Kanawha	Study area extends beyond the limit of mining influence on Route 61 based on the information submitted.	Reduce study area to include only the area from CB-1, west on Rt 61. Eliminate area from CB-1 to fire hydrant east of CB-1 near eastern study limit.

FEASIBILITY REVIEW STUDY

	A	B	C	E	F
1	ID	Name	County	Issues Identified & Comments	Corrections Required
22	386	Kanawha Co. RDA Pentacre Area	Kanawha	Known post law drainage and pre-law drainage were not sampled. One stream sample was added to package. Sampling distribution does not cover area -no sampling in the outer extents of the study area.	Pre law mining discharges, stream and wells need to be sampled and connected and discussed. Differentiate pre law and post law drainage. Tie north and south ends of study area and KCR1 & 2 wells to pre law mining.
23	261	Kanawha Co. RDA Standard/Paint Ck./Collinsdale	Fayette/ Kanawha	Piper diagram was referenced in the report, but not included. However, mine drainage samples, stream samples provide good evidence to pre-law mining relatedness.	None
24	328	Lashmeet PSD Mercer Co Rts 71/11, 71/20	Mercer	Piper diagram shows 5 of 8 samples impacted using 0% ambient line, but no mine samples have been used as referenced. Water samples do not show typical characteristics of mine drainage. Why does waterline run to high school area if there are no mining impacts shown here. May consider eliminating this section if pre law mining cannot be shown in this area.	Additional mine sampling and analysis is required to substantiate that this study area is being predominately impacted by pre law mining. Delete or justify area along Rt. 10. Need additional sampling along Rt. 11 to the Rt. 10 intersection.

FEASIBILITY REVIEW STUDY

	A	B	C	E	F
1	ID	Name	County	Issues Identified & Comments	Corrections Required
25	375-3	Lewis Co EDA Alum Fork Area	Lewis	Most of study area appears to be impacted by pre law mining. However, western side of study area needs additional analysis to be included in the project.	Additional sampling and analysis needs to be completed to prove the groundwater in the western side of the study area is being predominately impacted by pre law mining beyond Burkhammer residence.
26	375-??	Lewis Co EDA Bloody Run	Lewis	No info on mine drainage to compare, but high sulfates in all samples support mining impact. Only prelaw mining in area.	None. Would be best to have mine sample, but high levels of mining influenced water in the sampling is sufficient for conclusions.
27	375-2	Lewis Co EDA Laurel Lick Area	Lewis	Conclusion states that 4 of 6 samples are prelaw impacted. Sample data shows most wells exceed drinking water standards in some category.	Obtain samples from auger holes, mine spoil seeps and stream to substantiate pre law mining impacts to residential wells and document the tie in.
28	400	Logan Co PSD Extension Frye	Logan	No sample of the mine water to determine quality. Impaired quality based on ambient comparison on Piper. Interviews do not support quantity loss.	Discuss why wells can't be used (more support for quantity loss). If well is dry and can't be sampled, discuss in narrative. Provide UG mining info - elevation in comparison to well depths and discuss subsidence. Obtain sample for mine source and compare to wells. Provide site specific info, especially in 2.5 - 2.7 and provide a detailed site specific determination for Sections 3.0.

FEASIBILITY REVIEW STUDY

	A	B	C	E	F
1	ID	Name	County	Issues Identified & Comments	Corrections Required
29	210	McDowell PSD Davy To Roderfield	McDowell	Water samples were not included in the report. Page 5 of the Final Summary Report states an 83% impact based on Piper diagram, but Piper was not included in the report. Based on information available, no water samples were taken from mine discharges or streams to compare to well data.	WVDEP Mining Data Tools outline a large amount of pre & post law mining in the study area. Sample wells, stream and both pre & post law mining discharges and, through analysis of the results and other data, substantiate a predominance of pre-law mining impacts to the resident's wells. If Piper is used, add pre & post law sample results to well data to confirm impacts, i.e., pre or post mining predominance. Add photographic documentation to substantiate mining relatedness where possible.
30	392	Newburg Independence Area	Preston	Report did do a good job of explaining piper diagram results. Report does a good job of studying and revising study area based on pre and post law mining impacts.	Although the revised study area documentation adequately outlines the predominance of pre law mining impacts, sampling of mine discharges and streams in the study area would have been beneficial to the report. However, good report.

FEASIBILITY REVIEW STUDY

	A	B	C	E	F
1	ID	Name	County	Issues Identified & Comments	Corrections Required
31	356	NHJ PSD Rd and Findley Rd	Scott Randolph	<p>Scott Road Section: Although no mine discharge or stream samples were included, the report provided good evidence and discussion to relate the study area to pre law mining.</p> <p>Findley Road Section: An August 2000 report completed by Triad Engineering was included in the Stantec Feasibility package and outlines the Findley Road study area. However, there was very little mining information provided, no sampling or residential well data to substantiate mining impact.</p>	<p>Scott Road Section: Although the report adequately outlines the predominance of pre law mining impacts, sampling of mine discharges and streams in the study area would have been beneficial to the report.</p> <p>Findley Road Section: The Findley Road section will have to be deleted from the proposed project unless an additional study is completed to determine if the wells in this study area have been predominately impacted by pre law mining.</p>
32	334-1	Preston Co PSD #2 Herring Subarea 1	Preston	<p>Samples generally exceed secondary drinking water standards. No mine or stream samples to correlate well sample data to mining. No mining shown from Herring to the east.</p>	<p>If streams in the area are mining impacted and/or on the 303d list, acquire samples. Add stream and mine samples and compare to wells by raw data, piper grouping and analysis to substantiate appropriate pre law mining impacts. Additional documentation of mining would be required from Herring, east to substantiate mining impacts to groundwater.</p>

FEASIBILITY REVIEW STUDY

	A	B	C	E	F
1	ID	Name	County	Issues Identified & Comments	Corrections Required
33	334-3	Preston Co PSD #2 Herring Subarea 3	Preston	Based on the piper and water samples, mining impacts can be substantiated from Concord, north on Rt. 92 to upper study limit (near Birds Creek). Concord south on Rt. 92 and Rt. 41/1 requires additional study (mine, stream and well samples) to justify pre law mining impacts. Not enough sampling and analysis on Rt. 41/1 from PH-10 east to Rt. 41.	All of the study areas need additional mine, stream and well samples and re-analyzed to determine if predominate pre law mining impacts exist and a proper impact determination.
34	242	Preston Co PSD #2 Pell/St. Joe/Birds Ck.	Preston	The study area is known to be impacted by drainage from pre-law mining. However, more study is required to ascertain the impacts of post law mining in the "Campground" area and the areas around the Patriot mine workings that appear on the mapping to substantiate a predominately pre law mining impact.	Provide additional sampling and documentation to quantify the impacts of the post law workings in Birds Creek and Campground areas of the study limits.
35	349	Preston Co PSD #4 Mt. Nebo/Hudson	Preston	No info on mine drainage was provided to support adverse impacts from mining. Did not differentiate pre and post law mining. There appears to be significant post law mining and little pre law mining. Water samples show little evidence of mine influence. No AML samples were obtained to show water quality impact.	Provide additional sampling and analysis to prove the study area is predominately impacted by pre law mining.

FEASIBILITY REVIEW STUDY

	A	B	C	E	F
1	ID	Name	County	Issues Identified & Comments	Corrections Required
36	347	Preston Co PSD #4 Brandonville/Pisgah	Preston	No info on mine drainage was provided to support adverse impacts from mining. Did not differentiate pre and post law mining. There appears to be significant post law mining and little pre law mining. Water samples show little evidence of mine influence. No AML samples were obtained to show water quality impact.	Provide additional sampling and analysis to prove the study area is predominately impacted by pre law mining.
37	348	Preston Co PSD #4 Cuzzart/4-H	Preston	Information submitted does not differentiate between post and pre law mining. Very little mining shown in the eastern and southern study areas (Mountain Dale past Big Bear Lake, Lake Dale and Mt. View areas). Location of ambient sample and sample information was not provided. Overall water quality from samples, i.e. sulfates and iron, were not indicative of mine drainage in most of the samples. No AML drainage samples were provided to indicate predominate impact on study area.	Provide additional sampling and analysis to prove the study area is predominately impacted by pre law mining. If areas in the eastern and southern study areas are not predominately impacted by pre law mining, remove the area/s from the project.

FEASIBILITY REVIEW STUDY

	A	B	C	E	F
1	ID	Name	County	Issues Identified & Comments	Corrections Required
38	327	Raleigh Co PSD Clear Forks Rd	Raleigh	Although significant pre-law mining is in area, there are no mine discharge samples or stream samples to link mining to well degradation. Need more sample results from mining and streams to associate mining to well data. No post law mining is shown on mapping.	Additional sampling of mines and streams to connect pre law mines to well impacts and to show better mine influence on Piper. Re-evaluate study area north of Clear Fork to better delineate project area, and sample tributaries in this area and ascertain post and pre law mining impact. Extend sampling , analysis and mining documentation into Sycamore Creek to determine pre law mining impact predominance in the Colcord area.
39	311	Ravencliff-McGaws-Saulsville PSD Hanover/Ikes Fk.	Wyoming	Impacts of post law mining in study area needs additional review. Couldn't distinguish samples #25 and #43 on Piper. Rockhouse and Big Branch areas may need to be removed from study area if mining impacts cannot be documented.	Both pre and post law mine sampling needs completed and analyzed to determine pre law impacts and if pre law mining is the predominate negative influence on the well sample data. Need additional justification if Rockhouse and Big Branch area can be included in the study area.

FEASIBILITY REVIEW STUDY

	A	B	C	E	F
1	ID	Name	County	Issues Identified & Comments	Corrections Required
40	403	Wilderness PSD Route 9	Nicholas	Report conclusions found both pre and post law mining impacted water supply but did not distinguish which influenced the sampled wells, therefore, the report concluded a 50% impact. Piper diagram has no control sample to represent mine drainage. Could not determine from the report why the study area was revised.	Samples need to be taken from mine discharges and streams to tie pre or post law mining to the wells. Additional analysis and documentation is needed. Explain study area revision.
41	312	Wyoming Co. Comm. Coal Mt. Water	Wyoming	There are no stream or mine discharge samples to compare on the piper well plots. Mine mapping shows and abundance of pre law mining in the study area, however, on-line GIS information shows post law mining that needs to be shown and discussed in the report.	Additional sampling and analysis need to be completed to prove the wells are being predominately impacted by pre law mining. Document and analyze any post law mining impacts. Define the AML funding responsibilities outside of the study area as they relate to the transmission line and/or the new water plant upgrade.



west virginia department of environmental protection

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Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
dep.wv.gov

June 11, 2014

Roger Calhoun, Director
Charleston Field Office
1027 Virginia Street, East
Charleston, West Virginia 25301

Dear Mr. Calhoun:

The Office of Abandoned Mine Lands and Reclamation (AML) has funded waterlines for more than twenty years under the assumption that procedures were appropriate and acceptable to the Office of Surface Mining Reclamation and Enforcement (OSM). It is unfortunate and with great regret this sector of the AML program has been overlooked knowing the impact the Water Supply Eligibility Oversight Report has upon the citizens of West Virginia. AML has taken the opportunity to review OSM's 2014 Water Supply Eligibility Oversight Report and would like to convey the following comments.

At the time well water samples are collected, homes within in the study area have previously been determined to be surrounded by a predominance of Pre-law underground and surface mines. Knowing that mine discharges often contain elevated levels of metals, such as iron, aluminum and manganese, it has been common practice to attribute the presence of these metals to the surrounding coal mines. Without having the ability to sample wells prior to pre-law mining taking place, it is not possible to know the full impact mining has had on wells.

The following is found in OSM's 2013 Annual Evaluation Report indicating OSM's awareness of projects during the development stage. "AMLR has eliminated the application backlog that was created by the increased interest, and is conducting feasibility studies to determine if the waterline applications are eligible for AML funding as soon as applications are received. Feasibility studies have been initiated or completed for nine applications this EY, as compared to 14 applications in EY 2012 and 13 applications for EY 2011. The current list of eligible AML waterline projects consists of 42 projects with a total estimated cost of \$154 million with the AMLR share accounting for \$111 million of this total. Most of the waterline projects involve numerous other partners contributing funding from sources other than the AML program."

We are requesting the OSM Consistency Team provide guidance that can be used for all states and tribes.

Sincerely,

Rob Rice, Chief
Office of Abandoned Mine Lands & Reclamation

Promoting a healthy environment.

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Disposition of the West Virginia Department of Environmental Protection's Comments Concerning Water Supply Eligibility

The following disposition of comments is in response to the June 11, 2014, letter from the West Virginia Department of Environmental Protection's Office of Abandoned Mine Lands and Reclamation (OAMLR) concerning the Water Supply Eligibility Oversight Report.

OAMLR provided the following comments: "At the time well water samples are collected, homes within in the study area have previously been determined to be surrounded by a predominance of Pre-law underground and surface mines. Knowing that mine discharges often contain elevated levels of metals, such as iron, aluminum and manganese, it has been common practice to attribute the presence of these metals to surrounding coal mines. Without having the ability to samples wells prior to pre-law mining taking place, it is not possible to know the full impact mining has had on wells."

Charleston Field Office (CHFO) Response: The Office of Surface Mining Reclamation and Enforcement (OSMRE) agrees with the difficulty in knowing the full impact that mining has had on the wells. However, OSMRE maintains that sampling of the mine source(s) for comparison to the well water is necessary to ensure that Abandoned Mine Land (AML) funded projects are, in fact, adversely affected by mining activities that are predominately from pre-law operations as required by the Surface Mining Control and Reclamation Act of 1977 (Public Law 95-87).

OAMLR commented that OSMRE was aware of the projects during the development stage of the project, and quoted a section from the OSMRE's CHFO 2013 Annual Evaluation Report of the West Virginia AML Program to emphasize OSMRE's awareness of the feasibility studies.

CHFO Response: CHFO is aware of the OAMLR's commitment to waterline projects and the level of funding and effort needed to address these projects. However, CHFO is not involved in the selection or development of any type of AML project(s) and OAMLR has not previously been required to submit feasibility studies to CHFO for review. As discussed in the Corrective Actions section of the report, feasibility studies will immediately be provided to OSMRE as part of the AMLIS submittal for the next three years.

OAMLR requested that the OSMRE Consistency Team provide guidance that can be used for all states and tribes.

CHFO Response: Efforts are underway in headquarters to develop a team(s) to provide clarification for policies and procedures related to OSMRE's Authorization to Proceed process and Priority Documentation forms. It is anticipated that the proposed work will provide additional guidance for waterline projects.