



# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

Norman H. Bangarter  
Governor

Dee C. Hansen  
Executive Director

Dianne R. Nielson, Ph.D.  
Division Director

355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203  
801-538-5340

April 15, 1992

Mr. William R. Skaggs  
Blue Blaze Coal Company  
P.O. Box 784  
Price, Utah 84501

Dear Mr. Skaggs:

Re: Third Technical Deficiency Document, Blue Blaze Mine, Blue Blaze Coal Company, PRO/007/020, Folder #2, Carbon County, Utah

The technical staff commenced writing the Technical Analysis for the Blue Blaze Mine. However, due to the fact that there are still many deficiencies associated with this permit application package (PAP), it became necessary to prepare another deficiency document. This deficiency document represents a staff review of your current PAP and the submittal relating to ground water prepared by Earthfax, which has not yet been incorporated into the permit application.

There are some deficiencies that have been identified previously, which have not yet been satisfactorily addressed. A recurring problem that has also been noted before is still a problem, i.e., corrections made to solve a problem in one section of the plan were not corrected throughout the plan. The corrections, therefore, were only partially made in the PAP and made the document inaccurate.

This technical deficiency document relates to all of the technical disciplines required to prepare a technical analysis for the Blue Blaze Mine and make the necessary findings to issue a mining permit. The deficiencies relating to the ground water information prepared by Earthfax as a separate report (submitted March 27, 1992), is addressed in a section at the end of this document.

Mr. Rich White recently spoke with Mr. Tom Munson of my staff and told him that Earthfax would be editing the plan. I am not sure if that related to only Chapter 7 of the Blue Blaze Mine permit application package or the entire permit application package. It is suggested that a major edit of this permit application is in order and would help to clarify some of the deficiencies.

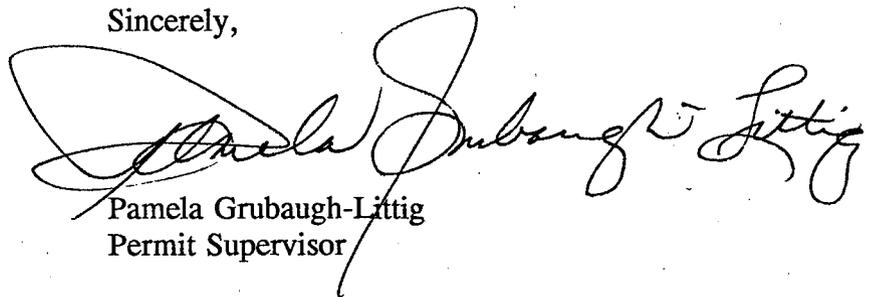
Page 2  
Mr. William Skaggs  
PRO/007/020  
April 15, 1992

Please be reminded that a finding pursuant to R645-300-133.100 must be made by the Division which requires that "all information in the permit must be complete and accurate and the applicant has complied with all of the requirements of the State Program.

Additionally, it is recommended that the MSHA numbers required by R645-301-112.700 be submitted at this time. As a reminder, MSHA approvals of the ventilation plan, roof control plan, etc. must be obtained before mining can commence.

If you have any questions, please call me.

Sincerely,



Pamela Grubaugh-Littig  
Permit Supervisor

jbe  
Enclosure  
cc: Dianne Nielson  
Lowell P. Braxton  
"A" Team  
007020TH

**TECHNICAL DEFICIENCIES  
BLUE BLAZE COAL COMPANY  
Carbon County, Utah  
PRO/007/020  
April 1992**

**R645-301-300 BIOLOGY (SMW)**

**321.100 Vegetation Information** Plate 9-2 is contradictory to Plate 3-1. Proposed disturbances are unclear and must be clarified.

**322.100** The Division of Wildlife Resources (DWR) has just recently expressed a concern about the potential for bats to inhabit old portals. The applicant must contract Bill Bates with the DWR to resolve this issue. Findings must be stated in the permit application.

**333.** The applicant plans to culvert the small tributary to the North Fork of Gordon Creek under the access road and then divert the water into an open ditch around the sediment pond and into Gordon Creek. The applicant states on page 10-57 that a buffer zone and a berm will be placed along this stream. It is the Division's experience that any open channel this close to a mining operation will be contaminated with airborne coal fines and is a potential site for violations. The Division suggests that the stream be enclosed throughout the operational area or the applicant must detail the buffer zone protection standards. The applicant's response to construct a berm along the creek does not enable the Division to make a finding that the applicant will minimize impacts on fish and wildlife species. Please correct the plan as needed.

**341.230 Revegetation** The applicant must specify the criteria for which erosion control matting will be applied. The Division suggests slopes 2½:1 or steeper should be matted.

**356. Revegetation: Standards for Success.** This entire section is unclear, confusing and contradictory. In certain sections of the permit, reference areas will be used. However, no reference area data is given. In other sections of the permit, the applicant states success will be judged on existing ground cover under R645-301-356.250 of previously mined areas. Please clarify and remove any contradictory information in the permit application.

Plate 9-2 indicates almost all of the area had been previously mined, and Plate 3-1 shows approximately two acres of proposed disturbance which was not previously disturbed. These contradictions must be corrected.

Any area which will be disturbed in mining which was not previously disturbed, greater than one acre in size, must have a corresponding reference area, range site, or premined data to use as a success standard. Reference area standards must be stated for cover, production and shrub density. Areas which were previously mined

may use the success standard as stated in R645-301-356.250. In either case, the success standard must be clearly stated and delineated for each area. The data must be collected, summarized and submitted in the permit application.

The applicant must review Chapters 3 and 9 for consistency. Success standards and premine vegetation information must be stated clearly and be consistent throughout the text. The text must also be consistent with the maps. Please correct so that the entire permit application is accurate.

The last paragraph on page 3-57 is unclear. Please detail the sampling program which is under consideration and pilot studies.

#### **R645-301-200 SOILS (HS)**

**232. Topsoil and Subsoil Removal** The applicant's response, dated December 6, 1991, requesting an exception to the requirements of R645-301-232 is not adequate.

The applicant has not adequately demonstrated that the soils southeast of pits #4, #5, & #6 and the fan portal (Senchert and Curecanti Families) meet the criteria for granting an exception to the requirements of R645-301-232 (i.e., R645-301-700 through 232-720). In addition, accurate estimation of the salvageable volume of topsoil is preliminary because of the highly variable horizonation within the described soil map units. The true volume of suitable soil material will only be known after removal operations are completed. Therefore, all available topsoil, which meet the Divisions' suitability criterium, must be salvaged and stockpiled.

**242 Topsoil Redistribution** The applicant commits to constructing contour furrows on the regraded topsoil at the time of final reclamation. While this is a common practice, the Division recommends maximizing surface roughness on regraded soils by pitting and gouging.

#### **R645-301-500 ENGINEERING (JK)**

**521.133** The PAP does not contain a finding under R645-103-234 (as cited in this regulation), that the interests of the public are to be protected, as coal mining and reclamation operations will be carried out within 100 feet of Utah State Highway 139.

The letter found on Page 3-6a of the PAP is not sufficient in this matter. The PAP must contain written permission from the authority with jurisdiction over Highway 139 for coal mining and reclamation operations to be conducted within 100 feet of Highway 139. Such written permission must also state whether or not the responsible authority requires a public hearing or public comment period. In either case, the responsible authority must provide to the Division a written finding that the interests of the public and affected landowners will be protected from the proposed coal mining and reclamation operations.

**523** As the applicant now intends to mine for some time in non-federal coal in order to show diligence for retention of federal leases, the PAP must be revised to clarify the intended mining procedure. The applicant must explain the general procedure as well as where mining will take place, what surface facilities will be constructed initially, and when the applicant intends to begin mining federal coal. A general map of the intended procedure must also be provided as well as a commitment, on the applicant's part, to mine no federal coal until the proper federal lease(s) are secured.

**R645-301-536 Coal Mine Waste (HS)** Once again the applicant refers to the removal and "proper disposal" of coal waste, soils/spoils contaminated with oil and grease and/or contaminated material (pages 3-21,8-21, etc.) The applicant does not, however, specify disposal techniques or disposal location for this material. Material from previous mine activities is located throughout the proposed mine site. The volume and acid- and/or toxic-forming potential of this material and its disposal during mining activities is questionable. In particular, the waste material which will be removed from the site of the topsoil stockpiles prior to topsoil placement does not have on site disposal plans. Therefore, the applicant must remove all reference within the PAP which call for the removal of coal mine waste material from the permit area and submit specific plans for the "proper disposal" of waste encountered during the redevelopment of the site.

**542.800** The reclamation cost estimate contains some notable errors:

- 1) Section 3.5.7.1, item 1 Portal Sealing (page 3-60) -- Portal seals are to be made of double rows of concrete block (see Figure 3-9). Thus, the required square foot area should be 1470 instead of 735 and the required time should be 4 days instead of 2.

- 2) Section 3.5.7.1, item 4 Scarifying (page 3-61) -- The stated reference to the Means Site Work Cost Data book is erroneous. The format and accompanying daily output (242-5020) are not found in the 8th Annual Edition for 1989.
- 3) Section 3.5.7.1., item 4 Grading (page 3-61) -- The stated format should be 242-5020 instead of 242-520.
- 4) Section 3.5.8.1, item 1 Loader (page 3-62) -- This reference is found on page 9-17 of the Rental Rate Blue Book, Volume 1, 4/91. There is no page 9-74.
- 5) Section 3.5.8.1, item 3 Cat D-7G (page 3-62) -- This reference is found on page 9-29 of the Rental Rate Blue Book, Volume 1, 4/91. There is no page 9-127.
- 6) Section 3.5.8.1, item 4 Cat D-7G implement (page 3-62) -- This reference is found on page 9-35 of the Rental Rate Blue Book, Volume 1, 4/91. There is no page 9-153.
- 7) Section 3.5.8.1, item 5 Road Grader Implements (page 3-63) -- This reference is found on page 9-3 of the Rental Rate Blue Book, Volume 1, 4/91, and not on page 9-13.
- 8) Section 3.5.8.1, item 6 Road Grader, Cat 120G (page 3-63) -- This reference is found on page 9-1 of the Rental Rate Blue Book, Volume 1, 4/91, and not on page 9-3.
- 9) Section 3.5.8.1, item 7 Backhoe, Cat 235C (page 3-63) -- This reference is found on page 10-4 of the Rental Rate Blue Book, Volume 1, 6/91, and not on page 10-13. Moreover, the respective daily and hourly rental costs and hourly operating costs are \$925.00, \$140.00, and \$26.10 rather than the present figures of \$495.00, \$74.00, and \$18.30.
- 10) Section 3.5.8.1, item 8 Hydromulcher B250 (page 3-63) -- There is no such reference in the Rental Rate Blue Book, Volume 1, 4/91, and no such piece of equipment as a B250.
- 11) Section 3.5.8.2 Summary of Reclamation Cost Estimate (page 3-64) -- The total in this section will have to be recalculated to take into account the prior errors and those that follow.

- 12) Section 3.5.8.3, item (b) Sealing Portals (page 3-64) -- The cited format in the Means Site Work Cost Data book (232-4200) requires 5 laborers instead of 3 (D-8 crew). In addition, double rows of seal blocks require 4 days time and twice the material stated. These factors bring the daily labor cost from \$381.84 to \$636.40, the total labor cost from \$763.63 to \$2545.60, and the material cost from \$992.25 to \$1984.50, for a revised total for this item of \$4530.10.
- 13) Section 3.5.8.3, item (d) Culvert Removal (page 3-65) -- Due to the changed backhoe cost (see Section 3.5.8.1, item 7 above), the total cost for this item is \$4040.52 instead of the present \$2563.32.

#### **R645-301-600 GEOLOGY (HK)**

**612** In accordance with R645-301-512.100, cross sections and maps required in the PAP will be prepared by or under the direction of a qualified, registered professional engineer or land surveyor. These maps must also be certified by the qualified registered professional engineer or land surveyor. At this time, it does not appear as though Plates 6-1 through 6-7 were prepared under the direction of Mr. Joe Shoemaker. In order to meet the requirements of R645-301-612, it is necessary to certify that each map was prepared under the direction of Joe E. Shoemaker, Registered Land Surveyor Number 4267.

The drill hole logs, contained within Appendix 3, also require certification. A cover sheet for the geology section and a cover sheet for Appendix 3 with a statement of certification would be adequate for the information contained therein.

**622.100** The maps contained within the PAP do not clearly show the elevations and locations of test borings and cores. Each bore hole must have an elevation assigned to it. The location of these must be clearly shown on a topographic map. In addition, the plan is somewhat inconsistent in regards to the number of bore holes discussed in text and those shown on maps. Certain data contained within the hydrology section of the PAP differs significantly from that shown within the geology section of the PAP. It is unclear why drill hole logs have been omitted, physically or by reference, from the geology section. Also of importance are the drill logs contained within Appendix 3. Many of these logs are illegible due to poor reproduction, quality of the photo copy and/or the original was incorrectly placed on the machine.

**622.300** The strike and dip of the coal to be mined within the proposed permit area needs to be shown. Plate 6-1 does show the strike and dip symbol for both the Hiawatha #1 Mine and the Castle Gate A #2 Mine within the explanation, however, this is part of the explanation and not shown on the map itself. If these are the strikes and dips for the Hiawatha and Castle Gate A Seams, then the points at which these measurements were taken need to be clearly identified on the map.

**622.400** Presently the PAP does not contain any discussion as to the location and depth of oil and gas wells within the proposed permit area. The PAP must contain a discussion of the existence, if any, of oil and gas wells within the proposed permit area.

**623.100** Tables 6-3 through 6-8 contain information addressing the potentially acid- and/or toxic-forming strata down to and including the stratum immediately below the coal seam. In addition, this information is supplemented by the text. The table and discussion, however, are confusing in places. On page 6-16 of the geology section within the PAP, the first paragraph under section 6-4.5.2 contains two sentences. It is not clear whether these two sentences should be one. The second sentence of this paragraph cannot stand by itself, and as such, this needs to be clarified. The following paragraph is also confusing. The first sentence discusses alkalies and their ranges from .01 to .14 for both seams. When discussing chemical formulas, the proper nomenclature must be used (i.e.,  $\text{Na}_2\text{O}$  not  $\text{Na}_2\text{O}$ ). The following sentence is not a complete sentence in and of itself and needs to be revised.

Within Table 6-7, clay content is discussed. However, there is no value for clay content within the Hiawatha Seam. If there is no clay within the Hiawatha Seam, a value of 0 should be placed here, otherwise, the appropriate value should be contained within this table.

Any other relevant information to the discussion of potentially acid- and/or toxic-forming strata such as that which may be contained within the soils and/or hydrology sections of the PAP should be cross-referenced within the geology section.

**623.200** At the present time, there is not discussion within the geology section of the PAP determining whether reclamation as required by R645-301 and R645-302 can be accomplished. This must be addressed.

**624.100** Presently the geology section of the PAP does not contain a discussion as to how the regional and structural geology may affect the occurrence, availability, movement, quantity and quality of potentially impacted surface and groundwater. It is believed other studies done for the Blue Blaze Coal Company are

contained within the hydrology section of the PAP and may be helpful in addressing this deficiency. Such information should be included physically or by reference within the geology section of the PAP. Inclusion of such information does not guarantee compliance, but will help further substantiate the discussion within this section. The discussion must address the regional and structural geology in regards to surface and groundwater.

**624.130** When discussing the geology of the proposed permit area and adjacent areas, it is important to correctly source information used in these discussions. On page 6-1 of the PAP, the last sentence of the fourth paragraph reads, "The igneous intrusions are tertiary lamprophyres." If this is based on field investigations by the Blue Blaze Coal Company, this should be noted. Otherwise, the information should be sourced to an author. Any other information, such as this, within the text that is the result of some other authors work, should be sourced.

Sourcing is also important for maps. Maps compiled from USGS base maps should be sourced as such. If the map is not based on a USGS topographic map and is based on another entity, such as an aerial service, that information needs to be contained on the map.

**624.210** As mentioned earlier in this technical deficiency, the logs contained with Appendix 3 are not certified. In addition, the reproduction of this information is so poor as to limit the reviewers ability to discern information from the logs. Some of the writing is illegible and other sheets were not copied squarely onto the page, thereby eliminating some of the information. The logs should be certified as required under R645-301-612 and should be presented in a format so that they are easily readable.

**624.340** The thickness and engineering properties, specifically the engineering properties, of clays and soft rock such as shale in the stratum immediately above and below the coal seam to be mined, is not discussed within the geology section of the PAP. In addition, this information is not referenced from any other part of the plan, and as such, must be addressed.

**631.100 & .200** Presently there is no discussion within the geology section of the PAP as to how casing and sealing of exploration holes and bore holes that might be created during the life of this operation are to be handled. In addition, there is reference to the LMC drill holes and it noted that these drill holes will not be utilized in the future. It is unclear whether the LMC drill holes have been sealed or not (Table 6-2 does not contain any information for the LMC drill holes).

The plan needs to address casing and sealing of exploration holes and bore holes, as well as the management of the LMC drill holes. The applicant must commit to casing and sealing drill holes, whether permanent or temporary as required by the R645-301-600 regulations.

**632.100 & .200** At present, the geology section of the Blue Blaze Coal Company's PAP does not contain any discussion about subsidence monitoring. There is no subsidence monitoring plan and no map showing the locations of subsidence monitoring points within and adjacent to the permit area. This information must be included within the geology section of the PAP.

#### **R645-301-700 HYDROLOGY (TM)**

**731.600.** The applicant has not provided an adequate demonstration that diversion U-5, U-2, and the inlet to culvert U-4 will be protected from the impacts of wind blown coal fines and, as such, the Division is not able to provide proof that a finding of no impact to the North Fork of Gordon Creek would occur. After looking at Plate 3-1, Surface Facilities Plate, it was determined that the location of the coal pile and the disturbance associated with the surface facilities requires culverting of diversions U-5 and U-2 and extending the inlet of Culvert U-4 150 feet upstream. This decision is based the probability that wind blown coal fines would impact the North Fork of Gordon Creek.

The applicant must meet the requirements of the Stream Buffer Zone Rules to provide a basis for making a finding of no significant impact in regards to the North Fork of Gordon Creek.

The applicant will provide the following:

The commitments and demonstration contained on page 10-57 is not adequate to make the finding required under R645-301-731.611 and therefore culverting of diversions U-5 and U-2 and extending the inlet of Culvert U-4 150 feet upstream is required to make a finding of no significant impact.

**742 Sediment Control Measures** The applicant has not provided a stand alone comprehensive BTCA plan for any areas not draining to the sediment pond either before or after reclamation. This plan must address each phase of mining (construction, operation, and reclamation). This plan must contain the amount of watershed area draining to each control, type of control (silt fence, straw bale, matting, etc.), amount of runoff treated, maintenance, and monitoring plan. It is essential that

this information be very clear and concise in one location in the PAP, preferably Chapter 7.

**742.324** The applicant has failed to provide certified designs (i.e., any designs contained on figures or in the text must be certified) of all diversions related to the North Fork of Gordon Creek. This must be provided per the requirements of R645-301-742.324.

The applicant will provide the following:

The applicant must certify all PAP drawings and designs related to the design of the diversion of the North Fork of Gordon Creek.

**742.300** The applicant still needs to detail certain diversion designs associated with the sediment pond.

The applicant will provide the following:

- 1) Riprap channel inlet cross-section and design.
- 2) Area of the opposite bank on channel U-5 where the sediment pond outlet discharge enters this channel must be protected sufficiently to handle flows from the pond.
- 3) All grouted riprap will have a 6-9 inch gravel base placed under the grouted riprap and weep holes placed in the grouted riprap per standard engineering design criteria.

**728.** The applicant must modify his text to incorporate all PHC submittals so all plates, maps, text, and conclusions are incorporated into one section. Currently, the plan has more than PHC discussion and does not incorporate all data related to the PHC under one Section or Appendix. The PHC must also have a summary of all water quality and quantity data demonstrating baseline seasonal variation.

The applicant will provide the following:

- 1) The applicant will modify the PAP to consolidate and incorporate all data, plates, maps, text, and conclusions related to the PHC into one Section or Appendix. All references to data, plates, maps, text, and conclusions must be clear and concise.

- 2) The applicant will be required to address the comments in the following memo regarding the March 23, 1992 Technical Deficiencies Document from EarthFax Engineering.

**R645-301-760.** The applicant has not provided the necessary hydrologic documentation to document all reconstructed channel designs and sediment control during reclamation. Some information is found on Plate 3-8 but channel cross-sections, designs, or profiles or designs have not been referenced in Chapter 7. A complete and accurate reclamation plan must be submitted addressing all Reclamation concerns and designs in Chapter 7.

jbe  
BLUEBLAZ.APR



# State of Utah

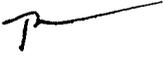
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

Norman H. Bangerter  
Governor  
Dee C. Hansen  
Executive Director  
Dianne R. Nielson, Ph.D.  
Division Director

355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203  
801-538-5340

April 10, 1992

TO: Pamela Grubaugh-Littig, Permit Supervisor

FROM: Thomas Munson, Senior Reclamation Hydrologist 

RE: Technical Deficiencies (Ground Water), Blue Blaze Coal Company, Blue Blaze Mine, PRO/007/020, Folder #2, Carbon County, Utah

## Synopsis

The Division received a Response from Earthfax Engineering for the Blue Blaze Coal Mine to the March 23, 1992 Technical Deficiencies Document regarding the March 11, 1992 Division response. This memo will spell out the remaining Technical Deficiencies.

## Analysis

The March 26, 1992 submittal meets the necessary requirements of the rules to define groundwater characteristics in the area of the proposed Blue Blaze Coal Mine for the Castlegate A Seam. There is a discrepancy regarding seam nomenclature as drill logs show what is commonly referred to as the Hiawatha Coal Seam as the Upper O'Connor Seam. The Table that EarthFax included in their report from the Division is wrong as described below due to this discrepancy in nomenclature. A corrected table is shown below.

Drill hole Evaluation

HOLE ID	DATE DRILLED	DEPTH DRILLED	DEPTH of PLUG	MEASURED DEPTH	CASTLEGATE DEPTH *	HIAWATHA DEPTH *
LMC 1	Sept. 1976	900 ft.	600 ft.	599 ft.	793 ft.	Unknown**
LMC 2	Oct. 1976	568 ft.	50 ft.	None	369.9-370 ft. ***	518-522 ft. ***
LMC 3	Nov. 1976	836 ft.	665 ft.	664 ft.	630-677 ft.	791-798.2 ft.
LMC 4	Jan. 1980	430 ft.	220 ft.	217 ft.	105.2-112 ft.	215-227 ft.

\* From drill logs provided in EarthFax Report: Response to Technical Deficiencies, Blue Blaze Coal Company, Blue Blaze Mine.

\*\* Drill log indicates Gordon Coal seam at 856 feet.

\*\*\* Drill log indicates Castlegate A seam replaced by channel sands, Gordon coal Seam at 435 feet.

It becomes apparent after reviewing this Table that the data presented shows that water levels have been collected from zones above, within, and immediately below the Castlegate A seam. No water quality data was collected because the seam was dry. Only LMC 1, 2, and 3 provide data applicable to the Permit Area. LMC 1 provides data from aquifers 200 feet above the Castle A seam. LMC 2 provides no data. LMC 3 provides data from above the Castle A seam and from within the Castle A seam. LMC 4 provides data from above, in, and below the Castlegate A seam. LMC 4 provides data from above the Hiawatha seam but penetrates old workings instead of an in place seam, therefore, cannot be used to accurately describe baseline conditions.

It is appropriate to take into account the surrounding mines and the occurrences of water documented to have occurred in those mines. Both the Gordon Creek #2 and #3 mines encountered small sporadic occurrences of ground water in the Castlegate A seam, but both mines encountered water in the Hiawatha seam, the most ground water being associated with the crossing of a graben in the Gordon Creek #3 Mine where the water was backed up against a graben which acted as an ground water barrier.

Recommendation

The Division recommends that the applicant be given a permit to mine Castlegate A seam when the following items have been satisfactorily addressed.

The applicant is required to address the following items:

- 1) Holes LMC 1 and 2 be redrilled in another location adjacent to the existing holes because of problems and uncertainties associated with redrilling the same hole already cemented.
- 2) All drilling proposals will obtain approvals from the Division of Water Rights and appropriate Government Agencies.
- 3) Baseline water quality data will be collected for a period of two years and can be reviewed at the end of one year, if the applicant provides an updated PHC summarizing all data collected in the PHC at the end of one year.
- 4) No water quality parameters will be dropped from the Division's water monitoring until the applicant provides a summary of the data for Division review and a discussion justifying the rational for elimination. If these parameters were consistently the detection limit and/or the drinking water standards, then it becomes appropriate that this is summarized in the PHC.
- 5) An approval to mine the Hiawatha seam will be contingent on the submittal of the revised PHC summarizing all water data collected to date, specifically addressing the aquifers above, within, and below the Hiawatha seam.
- 6) All submittals, tables, and maps be referenced in a complete table of contents and the permit application package be revised to reflect these stipulations and approvals.