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30 July 2012

John J. Stefanko, Deputy Secretary  
Office of Active and Abandoned Mine Operations  
PA Department of Environmental Protection  
Rachel Carson State Office Building  
400 Market Street  
Harrisburg, PA 17101

In re: **Recommendations to Expedite the Department's Underground  
Bituminous Coal Mine Permit Application Reviews**

Dear Mr. Stefanko:

It is in the public interest, as well as the interest of applicants and of the Department, that permit applications undergo prompt and thorough review. We have noted changes over the years in the Department's modules for coal mining applications, and we have commented previously during the review periods for several updated modules. Applications responsive to the modules comprise long and complex documents. We recently reviewed in substantive detail the currently pending Donegal Mine application in response to your request.

As a followup to that work, Schmid and Company has compiled a list of suggestions for the Department's consideration. These suggestions were compiled on our own initiative, as a public service, and completely separate from the technical review work performed for the Department and contracted by Rosebud. They draw upon our work spanning five decades to improve environmental regulations, maximize regulatory compliance, and assess the environmental impacts of development projects of all kinds, including many coal mines. The suggestions below continue our prior efforts to help the Department enable its modules to elicit clear and adequate responses from the regulated community.

We share the Department's goal of timely review that entails a minimum of subsequent requests to applicants for the supplemental information necessary for the Department to reach good environmental decisions consistent with regulatory requirements. We presume that the Department's attention will be turning once again to this topic, in response to the Governor's 24 July 2012 Executive Order 2012-11. So we hope that these suggestions arising from the bituminous coal mining modules we have just reviewed for a specific mine prove timely as well as helpful. We have not had the opportunity to review all of the latest module revisions,

so we recognize that some of our concerns may already have been addressed by revisions during the years since the application was filed that we have just reviewed.

Because Schmid & Company's primary expertise relates to wetlands, streams, and related water-resource matters, before we turn to module-by-module suggestions, we wish to point out three highly significant areas of concern we have regarding water resource protection in the context of these mine applications.

- Per Technical Guidance Document 563-2000-655, the Department now expects applicants to provide (and indeed, in most cases they *are* providing) very detailed baseline bioassessment information on streams and wetlands that are *potentially* to be affected by undermining and subsidence, whether by longwall mines or by room-and-pillar mines planned to undertake secondary coal recovery or sited on lands with less than 100 feet of cover. Most of this baseline information is to be provided in **Modules 8, 15, and 18.3**. Yet this same detailed information is NOT currently being required for streams and wetlands that are *known* with certainty to be impacted by the proposed *surface* activities of underground mines. It should be. In many cases, direct impacts to streams and wetlands are proposed to be mitigated in some way, typically by restoration. No stream or wetland can be restored, however, if its existing condition, functions, and uses have not been documented fully.
- In accordance with 25 Pa. Code Chapter 86.37(a)(4), the Department must complete a Cumulative Hydrologic Impact Assessment (CHIA) based in part on the information provided in the subject permit application (and in part on information available to the Department from other nearby mine permit applications and other sources). The modules, however, currently do not solicit the necessary information from each applicant, or solicit it in a logical way, for aiding the Department to properly perform a CHIA. The Department must determine the probable cumulative impacts of the subject mine and other mines in the general area on the hydrologic balance as described in Chapter 89.36. Like the biological assessments required for streams and wetlands under Technical Guidance Document 563-2000-655, the Department should require detailed baseline information about the existing "*relationship between the quality and quantity of water inflow to, water outflow from, and water storage in*" discrete drainage basins and aquifers associated with any proposed mine, as suggested by the definition in Chapter 89.5.
- In accordance with Chapter 93.4c(a)(1)(iv), the Department also must make an existing use determination for each potentially impacted surface water as part of any final permit action. To do so requires specific in-stream data about the existing, attained use of every affected stream. Per TGD 563-2000-655, the Department already is soliciting most of the information it needs to make an existing use determination, or at minimum enough information to identify those streams which are attaining uses higher than their designated uses and thus warrant further onsite review by the

Department's Office of Water Management. This is especially important for streams attaining Special Protection use (EV or HQ), but which are not designated as such in the current Chapter 93 list. With minimal effort, the Department's aquatic biologists in Harrisburg could and should routinely screen the stream inventory data in mining applications at the outset of each underground mine application review. For streams that warrant further study, they should then conduct antidegradation surveys of likely candidate streams to confirm conditions that would place a stream's attained use classification in a category higher than its designated use. Such recognition of in-stream conditions followed by public notice would enable the Department to protect against degradation the actual high quality of truly outstanding coalfield streams at risk of imminent damage pending their formal redesignation in Chapter 93. Such redesignation could alter the information required in the permit application prior to Department approval.

Petitions from public interest organizations have led to the recent upgrading of a number of streams in the Pennsylvania coalfields. The Department should routinely make full use of the extensive information now collected for mining permits in its ongoing efforts to protect pristine waters from degradation.

### **General Comments**

Bituminous mining permit applications are technically formidable documents prepared by several individual professionals over a significant period of time. Each applicant should be urged to review its entire submission before filing to insure the completeness and consistency of information provided. This is an important step entirely under the control of the applicant. Its omission inevitably results in delays to resolve inconsistencies and supply missing information. Perhaps a reminder notice from the Department would help reduce all-too-common, yet avoidable, problems of inconsistent information in underground mining applications.

Each drawing showing cross-sections should be required to have a note stating where (on what drawing) the geographical location for the sections is shown. Cross-sections cannot be interpreted outside the context of their on-ground location. In some instances the modules already direct where section lines are to be shown. It would take minimal effort to include these references as notes on each drawing that displays cross-sections.

The Department should increase its application fees to cover the real cost of labor to review permit applications. At present there appears to be no incentive for applicants to provide complete, clear, and consistent information to the Department, because the filing fee is the same whether the Department requires one person-week or three person-years to review it.

As a practical matter the modules in some respects fail to offer clear direction to applicants. Thus we suggest below various specific text revisions or additions.

The arrangement of information solicited by the modules also renders review unnecessarily difficult. In many cases, additional cross-references to information discussed in other modules would help. Our specific recommendations are presented in the order in which they are encountered by users of the modules. Clarifications could be provided by the Department in expanded "Instructions for Completing the Application" which currently pertains only to the General Information **Module 1**.

The Department also should offer one or more informational workshops for applicants and their consultants to convey technical guidance regarding current requirements for underground bituminous coal mining permit applications. It is clear from our review experience that mining applicants at present fail to understand the Department's requirements for NPDES permit applications and for Erosion and Sediment Control measures, especially in Special Protection watersheds. Knowledgeable professionals should convey this information, so that proper engineering designs and complete applications minimize the review time necessary to assure full environmental protection for new mining operations. Proper permit information submitted at the outset will enable the most effective use of time by reviewers and contribute to the Department's and the industry's shared goal of expeditious approvals.

## **Module 1. Application**

**Section D. Permit Coordination** This section addresses coal processing. The Department should make clear its intended distinction, if any, between coal preparation addressed in Section C and coal processing addressed here. The former may include the latter, and the latter may include the former, according to the definition of coal preparation activity at 25 Pa. Code 89.5(a). The resulting confusion in applications could be eliminated by clarification.

This section currently does not address coordination among all permits needed from the Department for the proposed mining activities, much less permits required from other federal, state, or local agencies. It would be helpful for the Department to list out all of the other permits and consistency determinations potentially required and to provide blanks for the applicant to indicate the status and application file numbers for each.

Alternatively, the Department could direct applicants to list out all other necessary permits and approvals and the status of each. At minimum such a list could serve as a reminder to applicants of what permits or evidence of compliance will be needed prior to initiating operations and probably will be needed prior to completion of the mining permit review. The information from several of those permits, such as the NPDES permit and associated Erosion and Sediment Control plans, is critical to decisionmaking on the mining application. Mining permit review cannot be completed until it is supplied. Local approval of stormwater management and floodplain encroachment may be needed.

## **Module 2. General Information**

In this module an applicant lists the modules (and their last revision dates) included in its application. Current Department policy during technical review appears to ask applicants to complete added sections from revised modules where necessary as supplements to pending applications. The Department should caution applicants that updates may be required any time that a module is revised to comply more effectively with regulatory mandates. Applicants would be prudent to keep abreast of such changes and watch for any relevance to their pending permit applications. Otherwise, requests for new information may create contradictory statements resulting in delays in review that could have been avoided by applicants.

A copy of the applicant's advertised public notice is to be attached to this module. Applicants should be reminded that incomplete or inaccurate public notices will have to be corrected and republished. Again, applicants seeking prompt review must take responsibility for providing accurate and complete public notices consistent with the content of their applications.

The modules nowhere state that supplemental and corrected information is to be filed with the public review copy of record. The Department should consider inserting a requirement that one copy of supplemental and corrected information (including drawings) be provided for the benefit of the public when such information is supplied to the Department.

### **Module 3. Ownership/Compliance Information**

Applicants should be directed to summarize here their mining activity and compliance history in Pennsylvania, with specific reference to eFACTS for supporting details. A general reference to the eFACTS database, as currently prompted by the module, does not expedite permit review. A brief summary of Pennsylvania activity similar to that required for out-of-state activity would be helpful.

### **Module 4. Areas Where Mining is Prohibited or Restricted**

When alternatives have been discussed with other agencies during coordination reported in this module, the Department should direct that such alternatives be illustrated in the application. The Department and the applicant are required to consider alternatives. It is not helpful to the Department when at least a brief discussion and appropriate drawings identifying alternatives considered by the applicant are omitted, especially if the applicant already has devoted time and effort to resolving issues with other agencies.

The Department should remind applicants that their coordination with other agencies must include and address all the parcels of land in the current application. Otherwise, the incomplete coordination probably will entail delay that could have been avoided, had the prior coordination been updated.

**4.3.** This section should refer to **Exhibit 22.4** for property locations.

### **Module 5. Property Interests / Right of Entry**

**5.1.** The module here should reference also **Exhibit 22.4**, which shows property locations.

**5.3.** The Department should explain what “individual permits” means in this context.

### **Module 6. Environmental Resource Maps**

The drawings specified by this module are of critical importance to review of the proposed mining activity. The requirement for **Exhibit(s?) 6.2** specifies a great deal of information for two areas that are to be shown on different maps: (a) the surface activity area and (b) the entire mine permit area plus 1,000 feet. The Department should clarify this directive. Does it really require all this information for both maps? Map (b) is likely to be cluttered unless produced at large scale. If there is any difference in information, it would be clearer to provide a separate list of the information appropriate to each map. Perhaps the Department already has tried to do this by addressing the entire permit area plus 1,000 feet specifically in **6.3**, but if so, **6.2.a** needs to be revised.

**6.2.a.** How does the Department expect an applicant to recognize “portions of common use or public roads which are or will be substantially impacted by site operations”? Clarification is needed. Are there any threshold criteria for identifying such impacted roads so that they can be shown on drawings? Is the Department concerned about public roads within any specific distance of a mining permit area or surface activity area? Is there some level of service that triggers a label of “substantially impacted”?

**6.2.e.v.** What springs, seeps, wetlands, and mine discharges does the Department want the applicant to show on the required drawings that address (a) the surface activity area and (b) the permit area plus 1,000 feet? What sources are to be used? Original field investigations? The Department should advise applicants that TGD 563-2000-655 inventory information is to be provided at minimum for all water features requiring a stream buffer variance within every surface activity area at any mine. What about all water features within 1,000 feet of the permit area? The full TGD inventory directive should pertain to the permit area plus 1,000 feet of all mines, and not only to those mines proposing surface subsidence, if an adequate assessment of cumulative hydrological impacts is going to be made by the Department.

**6.2.e.x.** The Department needs to clarify that surface and subsurface man-made features are to include all kinds of pipelines: interstate petroleum lines, gas gathering lines, distribution lines for gas, water, sewer, and electricity or telecommunications. The Department should specify what sources are to be used to identify these features. Published maps such as USGS topographic quadrangles? Original field inventory? Reports from OneCall 811?

**6.3.** If some or all of this information is required only for certain types of mines (e.g., longwall mines, retreat mines, R&P mines with less than 100 feet of cover or secondary mining, etc.) that should be clearly specified.

**6.3.e.v.** Whether this is to be the same information as **6.2.e.v.** is not clear. This kind of information typically is not readable at a scale of 1:6,000 (1" = 500'). The Department must clarify what it seeks from applicants in **Exhibit 6.3.** Details not readily shown at the small scale of **Exhibit 6.3** should be cross-referenced to **Exhibit 15.**

**6.3.e.v.** The same reference to the TGD as in **6.2.e.v** should be made here.

**6.3.e.v(5).** The Department should advise applicants under what circumstances "control streams" must be identified in the "general area" of a proposed mine and shown on the drawing. Is this purely optional at the discretion of an applicant? (See further comment under **8.8.**)

**6.3.e.v(6).** **Form 8.3B** deals with public water supplies and is not relevant to stream segments. This error should be corrected. Perhaps the intended reference is to **Form 8.4A**, the general stream inventory. Stream segment data should not be referenced to **Module 8.12**, which deals with wetlands.

**6.3.g.v.** The Department should indicate what sources are to be used. Is original field inventory required?

**6.3.g.xxi.** Mining projections probably represent additional clutter on this drawing. The Department already seems to anticipate that mine projections are better shown on another drawing. A cross-reference to **Exhibit 22.4** should be added here.

## **Module 7. Geologic Information**

**7.5.b.** The Department should direct that the extent of areas where coal is to be mined beneath less than 200 feet of overburden should be shown on a drawing of the permit area. If there are no such areas, a note on the drawing should state that.

**7.6.b.i.** The Department should request a brief explanation of the rationale for the procedure for overburden sampling used by the applicant.

**7.7.** The Department should state clearly that the limits of nearby past and current mining activity areas be shown on the drawings (**Exhibits 6.2, 6.3, and 9.1**) and be labeled to correspond with identified operations.

**Table 7.1.** To this table should be added a column reporting overburden thickness directly.

## **Module 8. Hydrology/Baseline Biology**

8.1.d. The Department should direct that the locations of unusual conditions that influence groundwater movement be shown on relevant drawings.

8.2.d. The Department must specify how seeps and mine discharges within 1,000 feet of the permit area are to be identified for presentation on Exhibit 8.2. Original field inventory? Prior reports from the Department and other agencies?

8.4. Stream inventory information (Form 8.4A) is to be shown on Exhibit 6.3. This information may not be legible at the scale of Exhibit 6.3. The Department should consider whether a different drawing should be required for these data. Form 8.4A does not anticipate that Special Protection waters may be affected. The Department should provide a column for indication of which streams are EV or HQ.

8.5. The Department should state what sources the applicant is to use to identify all discharge points within 1,000 feet of the permit area. Only discharges known from Department or other agency inventories? New field investigation? Other sources?

8.7.c. The Department should note here that all service lines are to be shown on Exhibit 6.2.

8.8. The Department should indicate that control streams are to be identified whenever stream damage is anticipated within a surface activity area or within a permit area where subsidence is planned, as part of the applicant's effort to comply with 25 Pa. Code 89.65, 89.74, and 89.82, unless the applicant prefers to provide detailed baseline information on the stream to be potentially damaged, as per TGD 563-2000-655.

8.9. The Department should indicate clearly that this information is required also where streams are to be damaged within any surface activity area in order to comply with 25 Pa. Code 89.65, 89.74, and 89.82.

8.11. The Department should direct that the extent of all lands within the permit area having overburden less than 100 feet thick should be shown clearly on drawings.

8.12.a.ii. The Department should revise this reference by adding the requirements for current methodology now set forth in regional supplements to the 1987 Corps Manual.

8.13.iii. The Department should remind applicants here that background sampling period and frequency should be sufficient to provide any information required by the necessary NPDES permit application for the mining activity. Applicants probably can save time and money by collecting all their background sampling data at the same time. Otherwise the permit review must be interrupted while missing data are collected and supplied to the Department.

8.14. iv.a(1). The Department should direct that areas with less than 100 feet of overburden within the permit area should be shown clearly on drawings.

**8.14.a.iv(5).** To “dams, ponds, and impoundments” should be added: streams, springs, and wetlands. This will assist the Department in preparing its CHIA.

**8.15.** The Department should remind applicants here that anticipated monitoring parameters, sampling period, and frequency should be sufficient to provide any information required by the necessary NPDES permit for the mining activity and the monitoring required by it.

**8.15e.** The Department should require the registration number of the certified laboratory to be listed.

## **Module 9. Operations Maps**

The Department should specify that limits of earth disturbance be shown on **Exhibit 9.1.**

The Department should direct applicants to specify how the limits of disturbance are to be indicated on the ground. Equipment operators need to have a conspicuous visual barrier to prevent their movement offsite.

**9.1.e.** The Department should direct the applicant as to what sources are to be used to identify springs, seeps, mine discharges, and constructed or natural drains in the surface activity area. Original field inventory?

**9.1.e.v** The Department should clearly direct that any floodways or 100-year floodplains within the surface activity area are to be shown on **Exhibit 9.1.**

**9.1.e.v** The same reference to the TGD 563-2000-655 as in **6.2.e.v** should be made here.

**9.1.e.xxvi.** The Department should remind applicants that containment for all petroleum storage tanks should be consistent with the requirements of the NPDES permit requirement for a Pollution Preparedness Control plan.

**9.1.xxvii.** The Department should advise applicants that all proposed erosion and sediment control facilities should be consistent with those required pursuant to the NPDES permit for the mine, requirements that may be especially significant in Special Protection watersheds. These measures also should address all runoff from the haul road, including dust control using treated wastewater.

**9.1.e.xxviii.** The Department should indicate what sources are to be used to identify landslide areas. If these are to be determined by original field inspection, what criteria are to be used to recognize landslide areas?

**9.1.e.xxxi.** The Department must specify who is to make the negative determination regarding prime farmland soils.

9.1.e.xxxiii. The Department must specify when and what aquatic and terrestrial enhancement measures are considered “applicable” pursuant to 25 Pa. Code 89.65(a).

## **Module 10. Operation Plan**

10.1.a.i. The Department should direct applicants to specify where produced coal will be sent from the mine for preparation or final use.

10.3. The Department should point out where its Net Neutralization Potential requirements are specified for watersheds of various quality.

10.8. The Department should remind applicants that containment for all tanks should be consistent with the requirements of the NPDES permit requirement for a Pollution Preparedness Control plan.

10.8.b.viii. The Department should indicate what recordkeeping on spills it requires and whether there is any threshold for spills below which spill records do NOT have to be supplied to the Department.

10.9. The Department should advise applicants that application review cannot be completed if plans for treatment and disposal of mine sanitary wastes are not included.

## **Module 11. Erosion and Sedimentation Controls**

The Department must remind applicants that all measures discussed in this module must be consistent with measures required as part of the NPDES permit.

The Department must direct that the proposed limit of disturbance and limit of forest clearing are to be shown clearly on all relevant drawings.

The Department should require that abandoned and reclaimed surface mined lands within the surface activity area are clearly distinguished and identified on all relevant drawings.

The Department should direct the applicant to identify the limits of all areas from which topsoil will be removed for stockpiling.

The Department should direct applicants to justify the need for any proposed burning of stumps or brush.

## **Module 12. Treatment Systems**

**12.1.** The module refers only to **Form 12.1A**, which provides a small part of the information needed for a mine's individual NPDES permit application. The Department should explicitly require attachment of the entire NPDES application, because the mining permit review cannot be completed without it.

The Department must direct applicants to identify all streams to which discharges are proposed.

### **Module 13. Impoundments**

**13.5.** The module prompts a description of scope and frequency of inspections and monitoring. The Department should direct the applicant to specify whether monitoring will be visual, by meter, or by sampling and wet laboratory chemistry. What parameters will be measured? What levels will be deemed sufficient to trigger modification of treatment?

### **Module 14. Liners and Caps**

**14.2.b.iv.** The Department should direct the applicant to state what warranties are offered on materials and installation by the manufacturer and the expected service life of liner materials. It is not sufficient to attach manufacturers' general specifications and expect reviewers to dig out this information.

**14.3.** The Department should direct applicants to quantify the amount and source(s) of sand needed from offsite for subgrade preparation. The mode of conveyance and volume of associated traffic should be estimated.

**14.5.** The Department should direct applicants to quantify the amount and source(s) of sand needed from offsite for protective cover over liners. The mode of conveyance and volume of associated traffic should be estimated.

### **Module 15. Streams / Wetlands**

The Department should provide a blank form that summarizes all requested variances from the 100-foot stream buffer prohibition by type and size of variance activity needed.

The Department should provide a blank form that shows the total length of each impacted stream segment by descriptive category (perennial, biologically diverse, etc.), together with the length of segments proposed for restoration post-mining.

These forms should correspond with information on and make reference to **Exhibit 12.4**, the water handling plan.

**15.1.c.** The Department should make reference here to 25 Pa. Code Chapter 86.102(12) and advise applicants what information typically to include in order to

demonstrate that “no adverse hydrologic impacts, water quality impacts, or other environmental resources impacts will occur” if a stream buffer variance is approved.

The Department should identify the length of time that a stream can be destroyed yet impacts to it remain “temporary. Weeks? Months? 1 year? 5 years? 10 years?

**Module 18.6.b.ii.** considers “temporary” as one year or less

**15.2.c.** The Department must specify clearly that any stream proposed for impact requiring a variance be thoroughly inventoried, at least to the extent required by Technical Guidance Document 563-2000-655. Absent such data, the resources potentially impacted cannot be known, restorative measures cannot be credibly designed, and the success of actual restoration cannot be measured.

**15.2.d.i.** This information is important for the Department’s preparation of a CHIA. The Department must also direct that the extent of all floodways and 100-year floodways be specified within the surface activity area.

**15.2.h.** This is where the Department must be sure to elicit adequate information to allow it to make the required “existing use” determination per Chapter 93.4c(a)(1)(iv). The Department must remind applicants that this analysis must address the specific requirements of NPDES permit applications pertaining to Special Protection streams and impaired streams.

**15.2.m.** For PFBC-stocked trout streams the Department must remind applicants that detailed information is required for the NPDES permit application.

**15.2.o.iii.** The Department should direct the applicant to identify (1) the actual square footage and (2) the affected proportion of all streams in (a) the surface activity area, (2) the permit area, and (3) the watershed of each stream where a variance is sought to allow impacts within 100 feet of the stream channel. The cumulative effect of filling these same proportions of these resources on other landowner’s properties in the watershed should be identified, because it is needed for the Department to complete its CHIA.

**15.2.p.** The Department should direct applicants to discuss alternatives and provide appropriate drawings that include all of their investigations during the preparation and coordination of mining plans. Partial information places the Department at a disadvantage when evaluating alternatives and prevents granting applicants credit for steps already taken to avoid or minimize impacts.

The Department should specifically direct the applicant to state whether its proposed plan concentrates surface activities on previously mined areas to the maximum extent practicable.

The Department should advise applicants that any claim that alternative locations or environmentally protective measures would be “uneconomic” must be backed by full documentation and compared to the expected cost of post-mining reclamation and

resource restoration as proposed in the application. Such analysis should focus specifically on any proposed damages to streams and wetlands requiring a variance from the 100-foot wide stream buffer prohibition.

**15.4.e.** The Department should direct the applicant to identify (1) the actual square footage and (2) the affected proportion of all wetlands in (a) the surface activity area, (b) the permit area, and (c) the watershed of each stream where a variance is sought to allow impacts. The cumulative effect of filling these same proportions of these resources on other landowner's properties in the watershed should be identified. This information is centrally important for the Department to complete its CHIA.

**15.5.** The Department should indicate that payment to the Wetland Replacement Project is unlikely to provide adequate mitigation even for small wetland impacts in Special Protection watersheds, and that greater than 1:1 mitigation may be required.

The Department should indicate that wetland restoration following temporary destruction is expected on all mine sites, but especially in Special Protection watersheds.

## **Module 16. Air Quality and Noise Control**

**16.2.** The Department should direct applicants proposing to use water for dust control to identify how the need to initiate the watering will be determined. Will watering be triggered by employee observations? By onsite particulate monitoring? If so, at what threshold concentration? By public complaints?

**16.3.a.** The Department should direct applicants to identify how many decibels will be produced by the mine fan(s) and at the nearest dwelling or other sensitive receptor(s). How will offsite noise levels at sensitive receptors vary with weather conditions?

**16.3.c.** The Department should direct applicants to identify the combined noise level from "other mine-related facilities" at the nearest dwelling or other sensitive receptor and discuss its variation with weather conditions.

## **Module 17. Soils / Prime Farmland**

**17.2.c.** The Department should direct applicants to identify on relevant drawings the location of topsoil to be salvaged and stockpiled.

The Department should direct applicants to quantify any topsoil that will need to be imported from offsite, specify source(s) and method of conveyance, and identify any associated traffic impacts.

**17.3.** The Department should specify here what documentation from what entity(ies) is required to certify a "negative declaration" exempting prime farmland from post-mining restoration.

The Department should direct applicants to identify the extent and proportion of prime farmland soils in the surface activity area, the permit area, and the watershed, and to address the cumulative loss of prime farmland if every landowner were allowed to disrupt a comparable proportion.

**17.4.b.** Segregation of soil horizons is usually beneficial to soil restoration after mining. The Department should identify circumstances under which soil horizons do NOT need to be segregated by applicants in anticipation of post-mining reclamation or direct that applicants must justify any plans NOT to segregate soil horizons.

## **Module 18. Land Use / Reclamation**

**18.3.** The Department should direct applicants seeking a variance from the 100-foot stream buffer prohibition to identify clearly how much of any impacted stream is proposed for post-mining reclamation and what metrics will be used to demonstrate reclamation success. The Department has provided suitable metrics for this purpose in TGD 563-2000-655, based on thorough premining inventory data.

**18.6.b.** The Department should direct applicants to indicate how choices will be made among alternative seed mixes proposed for temporary cover. Cost? Habitat? Season?

**18.6.c.** The Department should direct applicants to indicate how choices will be made among alternative seed mixes proposed for permanent cover. Cost? Habitat? Season?

**18.6.d.** The Department should caution applicants against including non-native Japanese larch and other non-natives in revegetation plans (e.g., Chinese chestnut, sawtooth oak, Scotch pine, European black alder). Non-natives tend to be invasive and to offer poor wildlife habitat. Asian sawtooth oak, for example, has bitter acorns and is generally not used by squirrels except when faced with imminent starvation. The rich native flora of Appalachia provides sufficient species for land reclamation in Pennsylvania coalfields.

**18.6.f.** The Department should direct that applicants specify the size of trees that will be planted for post-mining revegetation, identify any weed or predator control measures that will be undertaken, describe what conditions will trigger such control efforts, and specify how long after planting measurement will be made to determine successful revegetation.

The Department should require applicants proposing stream restoration to identify the time required to reestablish a biologically successful, forested stream ecosystem.

18.5.c. The Department should specify whom it considers responsible for permanent haul road maintenance post-mining.

## **Module 19. Reclamation Schedule and Cost Information**

19.2. The Department should direct applicants to specify how much of their site reclamation costs are allotted for stream and wetland restoration and to provide backup documentation for those estimates.

19.6 The Department should direct applicants to specify how much of their site reclamation costs are allotted for stream and wetland restoration and to provide backup documentation for those estimates.

## **Bond Calculation Worksheet**

**Sections B2 and C.** The Department should direct applicants to identify the areas and activities included in these sections on appropriate drawings.

**Section F.** The Department should remind applicants to include appropriate and realistic maintenance costs for roads, restored streams, and restored wetlands, including remedial reclamation and monitoring/reporting costs.

**Section G.** The Department should require a contingency plan for any proposed stream restoration, given the documented failure of many thousands of purported stream restorations in Pennsylvania and throughout Appalachia. This is especially important where Special Protection streams are proposed to be impacted and then restored.

## **Module 22. Subsidence Control and Underground Mine Maps**

22.1. The Department should direct applicants to provide a clear explanation of any non-mining areas (safety zones) identified on **Exhibit 22.4** related to the discussion in this section.

22.1.h.iii. This section should request also the diameter of reported gas or petroleum pipelines.

22.1.m.i. The Department should direct applicants to show clearly those sections of the permit area having less than 100 feet of cover on **Exhibit 22.4**.

22.4.d.xii. Only major electric transmission lines are to be shown on **Exhibit 22.4**. The Department should indicate the threshold voltage for lines it deems “major.”

22.4.d.xxi. The Department should indicate what sources are to be used to identify landslide areas. If these are to be determined by original field inspection, what criteria are to be used to recognize landslide areas?

**22.10.** The Department should direct applicants to cross-reference this section to previous modules identifying adjacent mine workings, and to identify the extent of listed mines on relevant drawings.

### **Module 23. Mine Openings**

No comment

### **Module 24. Special Protection Waters**

This module should refer to the Anti-Degradation Supplement for Mining Permits (Form 5600-PM-MR0007).

**24.6.e.** This section should request information about prior mining specifically in the surface activity area, not merely in the watershed of each affected stream.

**24.6.e.ii.** The Department should specify under what circumstances it expects that applicants should propose any measures to correct problems from previous mining. Is this an optional activity to be undertaken solely at the discretion of an applicant?

**24.6.g.** The Department should make clear that the percent of watershed question applies both to the surface activity area and the mine permit area, and answers should be given for both.

### **Anti-Degradation Supplement for Mining Permits (Form 5600-PM-MR0007)**

The Department should advise applicants that arguments rejecting environmentally protective alternatives as uneconomic must be supported by documentation comparing their cost with the cost of proposed activities including restoration and reclamation to the maximum extent practicable.

### **Social or Economic Justification (SEJ) and Water Use Demonstration for Mining Projects in High Quality Waters (Form 5600-PM-MR0028)**

**2(f).** Information on prior mining is elicited only for the “watershed”. Information also should be requested on prior mining in the surface activity area, as well as for the watershed of each stream proposed for impact.

**2(f)(2).** The Department should specify under what circumstances it expects that applicants should propose to correct problems from previous mining. Is this an optional activity solely at the discretion of the applicant?

### **Module 28. Underground Bituminous Coal Surface Blasting Plan**

No comment

Please contact us for further explanation if any of our suggestions are unclear.

Yours truly,

A handwritten signature in black ink, reading "James A. Schmid". The signature is written in a cursive style with a large, looping initial "J".

James A. Schmid, Ph. D.  
President

cc: William Plassio, California District Mining Office