

**Memo to the Water Quality GIT re: Erosion and Sediment Control on Extractive for 2015 Progress**  
**Reviewed by WTWG on 07172015**  
**Submitted to Water Quality GIT for consideration on 07312015**  
**Revisions Incorporated and Resubmitted to Water Quality GIT for consideration on 08042015**

**Introduction:** The WTWG was asked to consider three options for how best to simulate nutrient and sediment loads and reductions to those loads from the extractive land use for 2015 Progress. These options are listed below. In reviewing the options the WTWG acknowledged the following:

- 1) Each state's extractive land use acres were developed in slightly different ways with some states' acreages representing active, permitted operations and others representing estimated current and abandoned operations<sup>1</sup>.
- 2) The Phase 5.3.2 Model's characterization of nutrient and sediment loads from these land uses may not accurately reflect the actual loads from these operations as many of the acres are under permit effluent limits for pH, metals and sediment with only a limited number of mines permitted for nutrient runoff concerns. As a result, overestimating the loads from such areas are quite possible, and states with higher acreages of such lands (PA in particular) are very concerned about such overestimations.
- 3) The Erosion and Sediment Control expert panel did not review the reduction efficiencies associated with the Erosion and Sediment Control on Extractive BMP. With no review, the Partnership has no additional information to confirm or refute the current interim BMP's efficiency reductions.

**Option 1 (No Change):** This option would allow each state to continue submitting Abandoned Mine Reclamation in the way they have always submitted the BMP. Abandoned Mine Reclamation converts extractive areas to forest. There would be no addition of Erosion and Sediment Control on Extractive lands. The BMP would remain interim, and would only be available for planning scenarios. This option would not violate the calibration of the Phase 5.3.2 Watershed Model, but would make it difficult to compare extractive loads from 2015 Progress to 2015 Milestones for states who used Erosion and Sediment Control on Extractive in 2015 Milestones.

**Option 2 (AMR on All Extractive Lands):** This option would allow each state to submit Abandoned Mine Reclamation on all extractive lands in an attempt to simulate permit effluent limits on extractive lands. Abandoned Mine Reclamation converts extractive areas to forest. There would be no addition of Erosion and Sediment Control 1 on extractive lands. The BMP would remain interim, and would only be available for planning scenarios. This option would violate calibration of the Phase 5.3.2 Watershed Model, and would likely over-estimate reductions to sediment and nutrients that are occurring on these lands due to permit effluent limits. This option would still make it difficult to compare extractive loads from 2015 Progress to 2015 Milestones for states who used Erosion and Sediment Control on Extractive in 2015 Milestones.

**Option 3 (ESC on Disturbed Land and AMR on Undisturbed):** This option would allow each state to submit Abandoned Mine Reclamation on only the undisturbed portion of each state's extractive lands to reflect forest cover or plantings on undisturbed areas. This option would also allow each state to submit Erosion and Sediment Control on Extractive on the disturbed portion of extractive lands to reflect permit effluent limits. This BMP reduces nutrients 25% of N, and 40% of P and TSS from extractive lands. The BMP would no longer remain interim. This option would violate calibration of the Phase 5.3.2 Watershed Model, and may over-estimate reductions to sediment and nutrients that are occurring on these lands due to permit effluent limits. This option would make it

---

<sup>1</sup> Section 4.2.6 of the Phase 5 Chesapeake Bay Model Documentation describes how the land use was estimated. The document can be found at: [https://archive.chesapeakebay.net/Modeling/P5Documentation/SECTION\\_4.pdf](https://archive.chesapeakebay.net/Modeling/P5Documentation/SECTION_4.pdf).

less difficult to compare extractive loads from 2015 Progress to 2015 Milestones for those states who used Erosion and Sediment Control on Extractive in 2015 Milestones.

**Findings:** After considering all options listed above, the WTWG was unable to come to consensus. The issue is therefore raised to the Water Quality GIT for decision. If consensus on one of the options listed above is not reached by the Partnership,<sup>2</sup> no change will be made to the current submittal process (Option 1). However, the WTWG acknowledges that this creates inequity when assessing 2015 Milestones due to (1) historic differences in how states submitted BMPs on this land use and (2) because some states planned to use the interim BMP, Erosion and Sediment Control on Extractive to reduce loads by 2015, and this will no longer be possible since the BMP receives no credit in the Partnership's modeling tools for annual progress runs. Because of this, the WTWG suggests that EPA and the Partnership:

- 1) Does not evaluate programmatic progress towards the interim BMP, Erosion and Sediment Control on Extractive OR other interim BMPs; and
- 2) Mark Erosion and Sediment Control on Extractive AND all other interim BMPs listed in public documents and Web sites with an asterisk and accompanying language that clearly states these BMPs were interim for planning purposes only and states and no implementation is expected from these BMPs in progress scenarios given their interim status.

---

<sup>2</sup> The Water Quality GIT may also review the options and attempt to reach consensus as no consensus was reached at the WTWG level, and/or may choose to accept the adjustments to interim BMPs as listed in this memo.

## Comments

### **Gary Shenk, EPA representative, CBP Modeling Workgroup**

I haven't been involved much in the extractive land use conversation as it relates to phase 6, but reading over the email, I wanted to comment from the perspective of the statements made by the CBP Modeling Workgroup relative to the integrity of the calculations. The statements were to guard against violations of the phase 5 calibration and to ensure that the modeled changes reflect actual changes in management on the ground, not simply changes in accounting. I don't think that anyone would argue that we should change our loading rates in phase 5 based on the loading rate targets work that we are doing for phase 6. The argument here is the same. The application of the modeling system, the allocation method, and the WIPs relate to accounting for changes made through management.

Another point to understand is that any changes that are made in the phase 5 system that are not reflective of changes on the ground will not be carried over into phase 6. If the partnership redefines extractive at a lower loading rate, then all other land uses will have to increase slightly to cover those loads at the monitored calibration station and reductions will have to be found elsewhere.

I only support an option that represents an actual change in management and so my suggestion is to keep Option 1.

...

I have no doubt that the mining experts know the situation on the ground better than the partnership did when we were building phase 5. I think it is a good indicator of how we should go in phase 6.

However that doesn't change the issue that option 2 would be showing a change in management where none has occurred. One of the big problems for the jurisdictions in option 2 is that the 'paper' reductions will be short-lived. If we choose a lower loading rate in phase 6 the difference will be applied to other sources in the calibration and the reduction effects will have to be made up with BMPs on those sources. The jurisdictions would be getting relief now at the expense of their future WIP.

The argument that these are better assumptions than we had in the calibration is the same argument that the partnership has rejected repeatedly in workgroups and panels. The argument that this is a very small difference is not one that I would make personally because it requires some definition of 'small' that the partnership would have to determine, but it does lessen the concern about the effect on future WIPs.

### **Ted Tesler, PA (DEP) Representative, WTWG**

For Ph5, as suggested since we have made 2015 Milestone commitments for extractive E&S we feel it is appropriate that E&S Control (level 1) reduction efficiencies be applied to all disturbed acres in order to reduce the loads assigned to these acres. Abandoned Mine Reclamation projects conducted in PA should continue to be credited as a land use change to forested land and we will continue to only report the acres of land reclamation actually being conducted to maintain the integrity of this data. Claiming

AMR on all permitted acres we believe doesn't reflect the benefits of permit compliance as well as E&S Control does. The E&S level 1 and AMR crediting (Option 3) is our preference for the last few remaining years of the Ph5 model.

**Abdollahossain Liaghat, PA (DEP) Interested Party, WTWG**

As a result the combination of items 1, 2 and 3 [listed at the top of this document] has resulted in overestimating the allocated loads in the first place with no credit mechanism available to states. This approach is unfair to the states with significant acreages of extraction land use.

PA: Voted for option 3 because considering overestimation of loads (per item 2 of the acknowledgements) and not considering reductions as a result of effective BMPs is holding PA to overestimated loads. At the time of WIP 1 (2009-2010), the PA mining program had only a draft stormwater general permit for the mining activities that could only lead an applicant through the various BMPs available (Reference: Section 12 of PA Phase I WIP). PA made the commitment to finalize the permit and followed through with this commitment. Since then PA has finalized, has established and has applied the NPDES/GPS protocols to the extracted lands. Today, the PA mining office has a better administrative control and in fact PA has a permit and monitoring program effectively in place for the PA mining activities. Considering the above facts, PA thought that option 3 while might not be perfect, could somewhat address PA's concerns knowing that the acreage of extracted area in PA is way more than the combined acreages of all other states. If option 3 is not pursued, PA supports option 2. PA may choose to report using option 2 to help provide consistency with reporting.

**Bill Keeling VA (DEQ) Representative, WTWG**

After having discussions with the mining experts here in VA it is apparent that the p5 calibration assumptions on loadings were not valid. At least for the Virginia portion of extraction within the Bay watershed and I suspect is the situation globally within p5. For the entire calibration period there has been one or more sets of regulations governing extraction and that there has been a long history of management actions that have taken place which is not reflected in the calibration or BMP history. Therefore, option 2 corrects that situation by bringing the simulation more in line with the real situation as it existed during the calibration period and today. These land uses represent a very minor component of the calibrated and subsequent simulated acreage and loadings Baywide.

Option 2 recognizes that for decades now controls have been employed that significantly reduce the assumed moonshine loadings used in the calibration. This in my opinion does not violate the Modeling WG's desire to reflect actual changes in management but actually implements it holistically and efficiently and provides relief from unrealistic calibration assumptions.

Option 1 leaves us with a loading that in reality does not exist and limited ability to address it in the interim with the single BMP - abandoned mine land reclamation (AMR). It is also quite possible that AMR as currently simulated is being misapplied or an inappropriate set of BMPs for application to current extraction activities since these are a collection of activities used for actual abandoned sites

from before said regulations were in force. Many have to do with acid drainage and may have limited impact on the pollutants we are concerned with.

**Jeff Sweeney, EPA representative, WTWG**

As an EPA rep. on the Watershed Technical WG (along with Gary and Lewis), I'll cast my vote for Options #1 for the Phase 5 model (see details of the options below). Although we know some states are incorrectly submitting the Abandoned Mine Reclamation BMP by not following the definition (and getting too much "credit"), for the primary purpose of our tools, it's better to be consistent through time than to switch mid-stream and allow other states to now submit incorrectly for greater gain (Option #2). Option #3 isn't considered because it allows a workgroup to move a BMP (Erosion and Sediment Control on Extractive) from interim to approved-for-Progress without investigation by an Expert Panel and approval through the chain. We don't want to open this can or worms.

**Steve Gladding, NY (DEC) Representative, WTWG**

We feel that Option 3 best captures the treatment of mines in NY State. Mines with surface water discharges have been covered under state permits since 1993 and specific testing requirements for TN, TP and TSS since 2006. Even so, we feel this is likely an overestimation as most of our mines drain internally and have no surface water discharge. This raises the question, however, of how Option 3 would be implemented. Will states be required to submit acres of disturbed and undisturbed lands for each mine or does the Bay Program already have that information in the dataset already used in the Phase 5 model? This is not a significant enough topic for NY that we will undertake any additional work to make this happen.

**Greg Sandi, MD (MDE) Representative, WTWG**

Option 2: It is not clear that the reduction from AMR correlates closely to permit effluent limits. As described in Option 3, this conflicts with previous guidance to MD that a state cannot approximate BMP levels based on the presumption of meeting regulatory requirements.

Option 3: This option was shown to be a 1/3 and 2/3 ratio of the BMPs. This appears to be inconsistent with the CBP policy that stormwater BMPs must be geo-located, which was applied to Maryland's stormwater BMPs on new development. That is, MD is not allowed to estimate BMP implementation levels based on the presumption of a percentage coverage of land for which state law and regulation require BMPs. It also conflicts with CBP policy that BMPs may not be based on a percentage of compliance based on inspection reports. As an example, we have been told that we cannot use this approach for Erosion and Sediment Control as a percent coverage of Construction land in the model.