MARYLAND DEPARTMENT OF THE ENVIRONMENT

RESPONSE TO COMMENTS ON

PROPOSED REGULATIONS FOR THE

MANAGEMENT OF COAL COMBUSTION BYPRODUCTS

NOVEMBER 21, 2008

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General Comments

1. Department of Natural Resources/Power Plant Research Program (PPRP) - The proposed regulations would benefit from a short (one or two page) preamble outlining the intent, purpose and objectives of the regulations.

MDE Response: MDE notes that the Notice of Proposed Action published in the Maryland Register on December 21, 2007, contains a Statement of Purpose, and the Scope section under COMAR 26.04.10.01 provides a clear statement of the purpose and scope of the proposed regulations. These sections conform to the standards for the promulgation of regulations required by the Division of State Documents. More information concerning the Department's intent and rationale for the proposed regulations is provided on MDE's web page. Therefore, no change to the proposed regulations is needed to address this comment.

2. PPRP - To be consistent with industry standards, PPRP recommends that "by-products" is spelled "byproducts" and "flyash" is spelled "fly ash" throughout the regulations.

MDE Response: MDE agrees with this recommendation and will revise the regulations accordingly.

3. PPRP - The industry cost estimate due to the proposed regulations should account for current costs already incurred by industry as well as future costs likely to be incurred from FGD production and associated disposal/utilization. The industry costs due to the proposed regulations seem to be over estimated by at least a factor of two due to the double accounting of operational costs already incurred by industry which includes existing placement as well as closure costs (i.e., a 2 foot soil cap). Future industry costs associated with proposed regulations in 2010 and beyond will increase due to initiation and sustained production of FGD (Table 1). The increase in overall CCB production volume due to FGD is likely to significantly increase CCB disposal and utilization costs, particularly if FGD material is excluded from use in mine reclamation.

Table 1. Anticipated Future FGD Volumes in Maryland.

Plant	2010 and Beyond FGD Volume (tons/year)	
	Maximum	Estimated Average
Brandon Shores	1,200,000	1,080,000
Dickerson	310,000	229,000
Chalk Point	382,000	309,000
Morgantown	703,000	520,000

MDE Response: The updated information is noted and will be taken into account if MDE decides to republish the proposed regulations.

4. Utility Solid Waste Activities Group (USWAG) - We recommend that MDE adopt the widely accepted terminology for these materials. Both EPA in their Coal Combustion Products Partnership ("C2P2") and ASTM International use the term "Coal Combustion Products." That is what these materials are – products. EPA has committed itself to a strategic goal of achieving beneficial use of 50% of the materials generated by 2011. In 2006 (the most recent time period for which CCP use data are readily available) the percentage of CCPs beneficially used was nearly 44%. Terms like "byproducts" and "waste" simply discourage utilization of these materials by stigmatizing them with terms that connote something worthless and intended to be discarded. MDE would certainly not want to discourage increased beneficial use of these materials.

MDE Response: In accordance with statutory definitions of "solid waste" (Section 9-101 of the Environment Article) and recyclable materials (Section 9-1701 of the Environment Article), MDE has determined that these materials are only "products" if they are used as a raw material or product, and that they may not be used but rather discarded, in which case they are wastes. Moreover, at the time of generation it is not yet known whether any particular load or batch of the material will be used or discarded. Therefore, MDE believes "byproducts" is a more accurate descriptive term, which does not connote a specific fate for the material, but still allows for reference to the material without a potentially inaccurate implication. Therefore, no change to the proposed regulations will be made in response to USWAG's suggestion.

5. USWAG - There are a number of places in the proposed regulations in which MDE would require use of the toxicity characteristic leaching procedure ("TCLP" or "Test Method 1311") to characterize CCPs for various applications. This is an unsound test method for determining the environmental soundness of CCP applications. The TCLP is a test method for simulating the conditions in a municipal solid waste landfill where a wide range of very different wastes are co-disposed. CCPs are rarely managed in municipal landfills, and the proposed regulations are not setting standards for municipal landfilling of CCPs. An alternative test, such as synthetic precipitation leaching procedure ("Test Method 1312"), would be more appropriate. What is needed is a test that would more accurately predict the performance of CCP management than would the TCLP.

MDE Response: MDE considers your suggestion to be a valid approach where coal combustion byproducts (CCBs) will be used or disposed of in certain landfill and mining situations. However, we have several additional concerns:

Initial characterization of the material should include TCLP testing data so that MDE can know how the material will behave in a landfill environment if some is co-disposed with municipal or other organic solid waste, and as a basis for comparison to other industrial wastes; and so both MDE and potential users can use this to demonstrate that the material would not be a "hazardous waste" even without the Bevill Exemption, which may be important for explaining possible uses to the public.

It is noted that the actual contact time between infiltrating precipitation and CCB material may greatly exceed the 18-hour contact time provided in the test method, particularly in deep-fill situations. Therefore, MDE will consider investigating a modified test using a longer contact time for evaluating materials to be used in any beneficial uses that may involve more than a minimal thickness of fill not involving liners and leachate collection. In the interim, MDE will consider using the Synthetic Precipitation Leaching Procedure (SPLP) for evaluation of placement of CCBs in landfills and mines, until an alternative methodology can be approved.

The proposed regulations will be amended to add language to allow other tests approved by the Department for CCB placement in coal and noncoal mines (see Comment 131 and Comment 196).

6. USWAG - We recommend that MDE postpone action on regulating mine placement of CCPs until the OSM rulemaking on the same subject is completed. For MDE to jump ahead of OSM, the agency with expertise on mine reclamation, may require MDE to engage in a second rulemaking to conform its program to whatever requirements OSM promulgates.

MDE Response: MDE has determined that it needs to move forward with comprehensive state regulations on the management of coal combustion byproducts, including mine placement, to protect the public health and environment of the State. There is no guarantee when or if the Office of Surface Mining or any other federal agency will issue regulations. If OSM does adopt CCB regulations, then MDE can amend its existing regulations to comply with any federal requirements as needed.

7. Anne Arundel County - [It is]...imperative for the MDE to commit to assertively monitor and enforce new CCW regulations as well as all other existing regulation pertaining to mining and CCW generation, transport and disposal.

MDE Response: MDE intends to continue to monitor the use and disposal of coal combustion byproducts in the State and to enforce its existing laws and regulations pertaining to coal combustion byproducts.

8. Environment Maryland - All use (other than in a manufacturing process to make a new product), handling and placement of coal combustion byproducts should be regulated in a manner consistent with the requirements of the State's solid waste management regime, COMAR 26.04.07.

MDE Response: The distinction between a material that is a waste and a material that would otherwise be a waste but is being used as a product or raw material is provided in statute at Section 9-1701, Environment Article, in the definition of "recyclable material." If a material meets the definition of the law, it is not a waste, and so the solid waste rules are not applicable. Recognizing this, MDE has proposed regulations for the disposal of CCBs and the use of CCBs in noncoal mine reclamation that are consistent with and as

protective as the solid waste regulations and is proposing to develop new regulations governing allowable beneficial uses.

9. Rich & Henderson - The commentors seek clarification that the Proposed Rule applies prospectively only, and not to properties reclaimed using Coal Ash prior to the effective date of the regulations. The commentors propose revisions to a number of provisions of the Proposed Rule to clarify the prospective character of the regulations in its Specific Comments below. The proposed revisions are intended to clarify that new regulations will not alter the regulatory status of property where Coal Ash has been placed for mine reclamation, soil stabilization, fill or other purposes prior to the effective date of the regulations, and to clarify that the Department does not intend to classify such properties as "open dumps", or an illegal Coal Ash "storage" sites, or regulated "facilities".

MDE Response: MDE notes that the proposed regulations specifically provide that existing disposal facilities at the time of adoption can continue under their existing approvals, although MDE reserves the right to require additional controls (COMAR 26.04.10.04E). Moreover, MDE has defined mine reclamation as an allowed activity, and indicated that it intends to evaluate prospective beneficial uses and develop subsequent regulations that define what beneficial uses for CCBs may be allowed. Therefore, it is recommended by MDE that no change to the proposed regulations be made to address this comment. Concerning the issue of open dumps, please see Comments 70 and 79.

10. Rich & Henderson - The language used throughout the Proposed Rule regarding the regulatory status of Coal Ash, and products made using Coal Ash as an ingredient, is overbroad. Absent clarification, the Proposed Rule will impose unintended burdens on persons who have products made with Coal Ash and properties where Coal Ash has been placed for reclamation or stabilized fill. The regulations should clarify that only Coal Ash is subject to the regulations, not products using Coal Ash as an ingredient.

MDE Response: It is clear that, for those properties where CCBs have been placed for mine reclamation, it is intended that these properties be regulated under the proposed regulations and not as a beneficial use. As for products using CCBs as an ingredient, to the extent that those products could be considered a beneficial use, they will be addressed in the beneficial use regulations to be proposed at a later date. Therefore, no change to the proposed regulations is needed at this time to address this comment.

11. Environmental Integrity Project - The state could simplify and strengthen the proposed regulations by clearly defining minimum standards that would apply to all types of CCW disposal, while adding special provisions as needed to address variations in disposal or reclamation practices.

MDE Response: MDE believes that it is in fact doing this very thing, since the regulations provide the standards that must be met for the disposal of CCBs (26.04.10.04). The liner requirements proposed for the use of CCBs in noncoal mines

were derived from and are very similar to the requirements for a municipal waste landfill, which are cited in the existing regulation for industrial waste landfills. The special conditions applicable to the use of alkaline CCBs to combat acid mine drainage in coal mines are different to meet the special needs of those applications. Further special requirements for beneficial use activities will be taken up by the Department at a later date. Therefore, no change to the proposed regulations is considered necessary to address this comment.

12. Environmental Integrity Project - The static TCLP method may not be accurate enough to mimic the behavior of CCW under real-world conditions, or accurately reflect the potential for long-term release of contaminants. MDE should adopt NRC's recommendations to develop and require more effective methods for measuring the long term leaching potential of CCW.

MDE Response: Other commentors (see Comment 5) have suggested that the TCLP test may be inappropriate for assessing the leachability of CCBs when it is monofilled, as that test was developed to model the leachability of materials in an environment similar to that encountered in a municipal landfill, where the atmosphere is strongly anaerobic and the landfill leachate contains a moderate concentration of weak organic acids. Other tests suggested include the Synthetic Precipitation Leaching Procedure (SPLP), which is intended to model the performance of nonorganic industrial materials subject to precipitation which contains inorganic acids. In addition, several commentors noted that the SPLP and TCLP tests both have a relatively short extraction duration of 18 hours, and recommended that a longer test be developed, and that other tests such as the NRC procedure recommended by EIP be considered. MDE finds this to be a credible suggestion. As noted in Comment 5, the wording of the proposed regulations will be amended to add language to allow other tests as approved by the Department.

13. Environmental Integrity Project - The proposed regulations should clearly state that generators of CCW and not just the owners or operators of landfills or mining reclamation sites-are responsible for cleanup.

MDE Response: The requirements of the applicable laws generally make the permittees, owners or operators responsible for cleanup of a landfill or mining site and not the generators of the CCBs who normally are not the permittees, owners or operators of a site. Without an amendment to the underlying statutory authority it is uncertain that MDE could require a generator of CCBs to cleanup a site that it does not own or operate. Therefore, no change will be made to the proposed regulations to address this comment.

14. Environmental Integrity Project - MDE's proposal should establish penalties for the failure to comply with permit conditions.

MDE Response: MDE notes that administrative, civil, and criminal penalties for violations of permits and regulations are established in law and are typically not repeated in the regulations. For solid waste and water pollution penalties, see Sections 9-342 to 9-

343.1 of the Environment Article, Annotated Code of Maryland, among other statutes, which provide ample enforcement authority.

15. Matt Scanlon - Increase public notice and participation rights**.**

MDE Response: MDE is supportive of the need for citizen involvement. MDE notes that both disposal and mine reclamation activities require a permit from MDE, and that these incorporate the public involvement that is specified in Maryland law for the different types of approval involved. The proposed regulations cannot depart from the requirements of the statutes. However, industrial waste landfill permits are in fact subject to the significant public notification and comment process required by Sections 1-601, et seq., of the Environment Article plus additional requirements in Sections 9-201, et seq., of the Environment Article, and in fact include at least one mandatory public informational meeting, a mandatory public hearing, and an opportunity for a contested case hearing. County governments are provided copies of applications for landfills, and the applications cannot by law be processed beyond the initial phase unless the County government has provided written confirmation that the proposal meets all County zoning and land-use requirements, and is in conformance with the County 10-year solid waste master plan, both of which generally have their own public notification and involvement processes. County health departments are provided copies of the technical supporting documents and are invited to attend meetings and submit comments.

Section 5-204 of the Environment Article establishes the notice and hearing requirements for Title 15, Mines and Mining, which provide for public notice, public informational hearings, and contested case hearing procedures related to mining applications and permits. In addition, Section 15-205, Environment Article, establishes the public notice and hearing requirements for surface coal mining applications and reclamation operations, which provide that notice be given to the public concerning mining and reclamation applications and that the public may request a public hearing on the application. Therefore, no change to the proposed regulations is necessary to address this comment.

16. Children's Environmental Health and Protection Advisory Council - Require that a deed amendment be included in land records on a routine basis in order to alert prospective owners and authorities of the existence of a CCB disposal facility and related pollution control features on the site and to remind owners of their responsibility to manage the site in compliance with existing environmental laws.

MDE Response: It is noted that COMAR 26.04.07.19 and .20 relative to industrial waste disposal facilities do not contain a specific requirement for a deed amendment, but ample authority exists under COMAR 26.04.07.20D(3), 26.04.10.04C(5), 26.04.10.04E, and 26.04.10.04F for MDE to require this, and it has been MDE's policy to do so in the past. MDE may consider adding a requirement for deed amendments for mine reclamation sites in a future rulemaking. However, no change will be made to the proposed regulations at this time.

17. Children's Environmental Health and Protection Advisory Council - Consider measures that ensure adequate groundwater monitoring on a permanent basis.

MDE Response: It is noted that COMAR 26.04.07.20D(2) specifically allows MDE to require monitoring and to specify the monitoring points to be included, frequency, methods, reporting frequency, etc. These elements are routinely addressed in industrial landfill permit requirements, and the submission of an updated monitoring plan is required at least every five years or more often if necessary to ensure that the system is functional and monitors all areas of the landfill. The proposed regulations for noncoal mine sites require a monitoring plan and specified reporting requirements. See COMAR 26.21.04.07. COMAR 26.21.04.09 requires reporting for a minimum of 5 years following the closure of a site. This time period may be extended for good cause. COMAR 26.20.24.08 requires a monitoring plan for coal mine sites. Therefore, no change is needed to the proposed regulations to address this comment.

18. **Anne Arundel County**
A. There are inadequate requirements for public and County notification;
B. There is no requirement that all lab testing must be done by a state certified laboratory;
C. The setback requirement to property lines should be 1000 (not 200) feet;
D. The operators should be required to test for possible radioactive contaminants as these have been found in fly ash elsewhere;
E. Post closure regulations should be filed for much longer than five years, I suggest 30-year monitoring as has been recommended by national experts.

MDE Response: A. Please see Comment 15 for the response concerning public notification requirements**.**

B. The State only certifies laboratories for the analysis of drinking water, not water quality, wastewater or solids analyses. Therefore, no change to the proposed regulations will be made to address this comment.

C. The 200-foot setback is the minimum allowed under the proposed regulations, which MDE considers to be satisfactory. It is noted that county zoning rules address horizontal buffers to property lines, and that for landfills these buffers vary from county to county. Individual counties may establish their own setback requirements. Therefore, no change to the proposed regulations is considered necessary to address this comment.

D. MDE agrees that testing of groundwater for certain radioactive parameters may be appropriate in certain cases and will address this issue through permit conditions for monitoring plans on an as-needed basis.

E. The five-year post-closure period for disposal sites and mines may be extended by the Department for cause and routinely has been extended when appropriate. Therefore, no change to the proposed regulations is needed to address this comment.

19. Crofton Public Meeting – February 19, 2008

A. **Citizen comments -** If eventually you develop on this land you would have to dig through the fly ash. How would you protect public water, power, and sewage from contamination?

B. There should also be regulations for the liners that are used.

C. How does the material get to that dump site? Where are the plans that this material comes from why should this dumb thing be done in a populated area? Why not in the mountains or a rural area?

D. **Environment Maryland** - Two things I would like to add regarding the next round of regulations: (1) Fly ash mixed with dirt (2) More public involvement.

E. **Four Seasons Community Association** - Given the recent events in this area, are there plans to increase the monitoring of the public drinking water?

MDE Response: A. For permitted landfills, a notice is generally required to be attached to the deed to the property notifying future property owners of the presence of a landfill, and requiring that the site not be disturbed without MDE approval. MDE routinely works with permittees and with MDE's Voluntary Cleanup Program to evaluate such proposals, which typically contain extensive sampling evaluations and risk assessments to ensure that the proposed development will be safe and will not negatively impact the performance of the cap and other pollution controls. Similarly, for noncoal mine reclamation sites, the proposed regulations require an operations plan for disturbance of the closure cap and to verify integrity of the liner and leachate collection system. See COMAR 26.21.04.09G. Therefore, no change to the proposed regulations is needed to address this comment.

B. Liner specifications are included in both of the proposed regulations for noncoal mines at COMAR 26.21.04.06, Leachate Control and Collection, and the existing regulations for industrial waste landfills at COMAR 26.04.07.19, Sanitary Landfills – Industrial Landfills – General. The liner specifications in the cited reference are very similar to the specifications in COMAR 26.21.04.06, and can be found at COMAR 26.04.07.07C(12).

C. State and local agencies both have a role in determining whether a proposed site is suitable for a proposed use, such as use as a repository for CCBs, but do not control how such sites are selected for a proposal in the first place, as that is done by the applicant. Any landowner can apply for a surface mine or landfill permit; whether he or she gets a permit or not is dependant on whether they can satisfy all of the legal requirements. County zoning establishes whether a given land use is suitable given the surrounding land uses. MDE evaluates the site for its environmental and engineering characteristics, to determine what permits are needed, whether the applicant has met the legal and technical requirements for issuance of the permits needed, and what the requirements of those permits should be. MDE determines whether a proposed site is acceptable or not from an environmental standpoint, and the County government determines whether a proposed site is acceptable or not from the standpoint of zoning and land use requirements.

D. Comments concerning beneficial uses are acknowledged but will be addressed in future regulations concerning beneficial uses. See the response to Comment 15 concerning public notification and involvement.

E. Public water supplies are already subject to a large sampling effort – the larger the system, the more sampling that is required. At this time, public water supplies are not considered at risk, so no additional sampling is considered necessary for the public systems. No changes to the proposed regulations are considered necessary to address these comments.

20. **Crofton First – Tim Berkoff**

A. Public notification: Provision for permit application specific for fly ash disposal, which is subject to public notification, comment, and hearing. Although its has been pointed out that regulations reference other permitting steps that include public notice and hearing opportunity, we prefer proposed regulations explicitly state public participation rights for fly ash disposal even if it may be duplicative elsewhere in the regulations.
B. Notification of near-by well owners of any persistent water quality exceedance that extends beyond a 30-day re-sampling period. While the proposed regulations provide for notification of MDE, nearby well owners should also deserve notice for any non-compliant events.
C. Use of supplemental government laboratory tests for periodic independent testing and validation of industry self-reported data. In cases where aquifer contamination is discovered and could threaten drinking water wells, independent, supplemental government testing should be increased to ensure validity of polluter-reported data.

MDE Response: A. See the response to Comment 15 concerning public notification, comment and hearing requirements. No change to the proposed regulations is needed to address this comment.

B. Crofton First requests that near-by well owners be notified of any water quality exceedance that is confirmed by resampling. While MDE understands the concern of nearby well owners, not every exceedance presents a health hazard to the public, and MDE does not agree that a public notice is necessary in all cases of exceedance. Public notice of certain exceedances may be provided based upon individual site data and proximity to other properties and water supplies. MDE will amend the proposed regulations to require a permittee to notify the local health department of certain exceedances (See Comment 193). Also, information on exceedances is available to the public if requested under the Maryland Public Information Act.

C. Crofton First recommends that the government (presumably MDE) perform verification sampling to confirm data provided by the operator where aquifer contamination has been identified. MDE notes that we retain the authority to sample or split samples to validate data, and do so when it is considered necessary due to data validity concerns, but as a rule MDE relies on third-party sampling and analytical data, and has found that they produce excellent data on the whole. MDE believes that no change to the proposed regulations is needed to address this comment.

21. Crofton First – Tim Berkoff - Site Requirements: A. Prevention of placement of fly ash within 800 feet of any residential or school building currently occupied or anticipated to be occupied (i.e., under construction, or in planning process) or any well used for drinking water.
B. Consider maximum accidental contamination hazard levels either from structural or geotechnical collapse, failure of equipment, power loss, large-scale storm events. Site design should incorporate fail-safe mechanisms for leachate collection and stormwater overflows.
C. Prior to site establishment, a plan should be carried out to characterize baseline aquifer characteristics, and identification of any aquifer influences from nearby sources; and avoid soil and lithologic geologic stratums that have high permeability and infiltration rates, as are present with gravelly soils. As gravel mines tend to be near if not directly in contact with surface water, and would be a very porous medium (due to gravel that is being mined) that in particular these sites be avoided.

MDE Response: A**.** MDE considers buffer zones to be the province of local land use and zoning rules, which vary from county to county. It is noted that a 200 foot minimum buffer zone is already recommended in the regulation. Also, as wells may draw water from deep aquifers that are protected from any surficial impact, the suggested buffer zone around any well may be overprotective. It is noted that numerous landfills use onsite water supply wells safely. Therefore, no change to the proposed regulations is needed to accommodate this comment.

B. Crofton First suggests that landfill plans should consider possible worst-case scenarios such as structural failure and equipment breakdown, and provide "fail-safe" mechanisms for leachate collection mechanisms. MDE notes that landfill plans generally include contingency planning for power failure and equipment breakdown. Leachate pumps cannot be made fail-safe, but are generally readily replaceable within a few hours or days. In many landfill designs, failure of the power supply does not mean that an overflow will occur, but rather that the leachate cannot be extracted until the power is restored or a new pump is provided. Landfill permits also require notification of MDE in the event of equipment breakdown or failure or damage to any of the environmental controls such as leachate collection and storage systems. Therefore, no change is needed to accommodate this comment.

C. Crofton First suggests that the aquifer characteristics of a proposed site be defined. Also, they recommend that sites with highly permeable substrates should be avoided. MDE notes that as part of the application process, geologic and hydrologic information is required to be submitted for industrial landfills, including groundwater elevation data, maximum predicted groundwater levels, geologic information, and background water quality data, as well as any other information that MDE may require (see COMAR 26.04.07.19 and especially .20). These requirements are part of the proposed regulations for noncoal mines as well, which includes sand and gravel pits (see proposed COMAR 26.21.04.04). Geologic and hydrologic information is taken into account by MDE when making determinations relating to site suitability and design considerations. Therefore, no change is needed to the proposed regulations to accommodate this comment.

22. Crofton First – Tim Berkoff - Re-disturbance of site or restart of existing operations. A. In the case of a "closed" fly ash site, regulatory requirements need to provide more specific controls for re-disturbance or proposed restart of disposal operations under existing permits. For sites with > 100,000 tons of fly ash present, a public notification, and hearing should be carried out for cases involving development activities with a cumulative disturbance of > 8 tons of fly ash, in order to review and adequately protect against further degradation of the environment. This review should include a detailed justification, geotechnical, stormwater, hydrological and fugitive dust review to ensure activities comply with all new standards and requirements, and demonstrate that further degradation of the environment will not occur.
B. Any prior permitted site not receiving fly ash for more than 5 months prior to April 1, 2008 should be treated as a suspended activity, until a new application is submitted, reviewed, and approved for future disposal following all new regulatory requirements and procedures.

MDE Response: A. This comment recommends that a reactivation, disturbance or development of large fly ash sites should require public notification and comment. MDE is generally supportive of the need for citizen involvement, and it is noted that "reactivation" could entail "expansion" of the site, in which case the public comment requirements of either the landfill or mine permit processes may be applicable. However, if a dormant site already has authorization to continue activity, then no new approval is needed under Maryland law. As part of the permitting process for landfills, a conceptual closure plan is included, although this is usually subject to updating at the time that the facility closes; this is not subject to public comment after the initial permitting activity unless a material alteration such as an expansion is proposed (in which case a new permit is generally required). Post-closure disturbance of a capped landfill generally requires MDE approval, and if it involves development, it is likely that local zoning approval would also be required, and the amount of public comment involved in that process would depend on local zoning rules. Also, there may also be an opportunity for public comment if the subsequent development is proposed under MDE's Voluntary Cleanup or "Brownfields" programs. However, MDE notes that a regulation cannot be contrary to the authority provided by statute, so where an opportunity for a public hearing is not now provided by law, the proposed regulation cannot require one. Therefore, MDE recommends that no change be made to the proposed regulations to accommodate this comment.

B. Crofton First proposes that any prior permitted CCB site which becomes inactive for more than five months should be considered closed, and have to reapply for a permit. This conflicts with existing Maryland law, which requires a permit before a landfill can be constructed or operated but which does not compel the permittee to fill their landfill at a specific rate. As a precedent, numerous county landfills have suspended disposal at their landfills in favor of transportation to out-of-state landfills when the market made that option attractive, without being required to close their sites as long as they were cared for appropriately. Moreover, it also runs counter to efforts of operators to preserve their landfill capacity by recycling and diversion of waste to acceptable uses instead of disposal, which the Department has historically supported for all other waste streams

where appropriate. Therefore, no change to the proposed regulations is needed to accommodate this comment.

23. Crofton First - Tim Berkoff - We request MDE to review uranium, radium, and other radioelement impacts for the Gambrills site, and in conjunction with the latest research, review any relevance to monitoring and testing requirements for the proposed regulations. We believe this issue should be examined both from an inhalation of fugitive dust as well as water quality perspectives.

MDE Response: Crofton First suggests that due to the possible concentration of naturally occurring radionuclides inherent in the combustion process, that the Gambrills site be evaluated for radionuclides. MDE is aware of the issue and may consider adding gross alpha, gross beta, uranium, thorium, and Radium 226-228 testing to routine groundwater monitoring plans for CCB placement sites if needed.

MDE is aware that naturally-occuring radionuclides are captured in fly ash during the coal combustion process, in a fashion similar to other trace metals. The EPA estimates roughly a 10-fold greater concentration of radionuclides in fly ash than in uncombusted coal (EPA 1999). The U.S. Geological Survey reports that despite this concentrating effect the majority of fly ash is not significantly enriched in radioactive elements compared to common soils or rocks (USGS 1997).

As with other metal constituents in fly ash, radionuclides have a potential to migrate off-site through both groundwater and above ground pathways. In groundwater, active pH controls and natural reactions with rock and soil can limit the solubility of uranium, thorium, and many other decay products (USGS 1997). Radium tends to form highly insoluble compounds with the sulfates present in fly ash. The available data are limited but suggest that dissolved radionuclides in fly ash leachate are typically below levels of human health concern (USGS 1997).

Above-ground radiation exposures from fly ash are small in comparison with other daily sources of radiation. In a UK study (Smith et al. 2001), high-end exposures to workers burying fly ash were estimated at less than 1 millirem per year. High-end exposures for residents were approximately 0.1 millirem per year (the scenario involved a large, unwatered ash pile with exposures from external irradiation, inhalation, and consumption of vegetables grown in contaminated soil). By comparison, the average U.S. citizen receives a dose of 300 millirem per year from natural sources, indoor radon being the largest source. In terms of cancer risk in the UK study, the peak risk was approximately 1 in 1 million over a 10-year operating period. The average concentrations of radionuclides in U.S. coals would not significantly change the findings of the UK study. Another study, highlighted by EPA, examined emissions from a 42-acre fly ash site in Tennessee (Sutton 2001). Exposures from direct contact, inhalation, and ingestion fell below natural background radiation exposure levels, including for workers standing on the ash pile. Based on these and other studies, EPA expects low risk from radionuclides in coal ash (EPA 1999). Beck (1989, U.S. Department of Energy) reported that the

radiation exposure to most individuals from fossil fuel combustion wastes is only a tiny fraction of the dose received from routine natural sources in soil and building materials.

While the disposal of CCBs has a low radiological impact, the Department believes it may be appropriate to require testing to characterize radiation levels in CCBs and MDE may require testing as needed under the proposed regulations. The Department also retains the authority to require the direct testing of fly ash, leachate, monitoring wells, and other media. No change is needed to the proposed regulations to accommodate this comment. References to the studies noted above are available from the Department upon request.

24. Dick Lahn – Crofton - Third party independents should have responsibility in every instance that data is collected, analyzed and reported. All this information should go to MDE, AA County, and the public at the same time. Monitoring should not be done by Constellation, for it to be credible, it must be done by an independent third party.

MDE Response: It is MDE's experience that most landfill permittees use independent laboratories. All laboratories must be acceptable to the Department. The Department has experience in dealing with water quality laboratories and will review each submittal from the lab and may ask for certain quality controls and third party verification as needed. MDE retains the right to split samples or even take independent samples as needed such that a third party independent is not always needed. MDE staff review reports submitted and evaluate quality assurance data to ensure that the data is consistent.

Once submitted to MDE, the data are available to the public in accordance with the Maryland Public Information Act. Also, if the data are required to be submitted as part of an approved monitoring plan, which is public information, then an interested party would be able to obtain the sampling schedule and timely request copies of the data. See also Comment 193 concerning changes to the proposed regulations, which would require notice to the local health department of certain exceedances of water quality standards.

25. Dick Lahn - Crofton - Soils should be tested at the dump sites to determine whether volatiles, semi-volatiles, and organics are present regardless of any consideration as to disposition of the property, e.g., for a shopping center to be built on top.

MDE Response: MDE notes that for permitted landfills, closed sites cannot be developed without MDE approval. MDE's Voluntary Cleanup Program and Solid Waste Program often collaborate to evaluate such proposals, which typically contain extensive sampling evaluations and risk assessments to ensure that the proposed development will be safe and will not negatively impact the performance of the cap and other pollution controls. This comment does not apply to coal mining sites because there is no liner or cap to be disturbed in coal mine reclamation. For noncoal mining sites, the proposed regulations provide that if post-reclamation land use includes development of a site, then the permittee shall submit operation plans for review and approval to the Department, which would include any disturbance of the closure cap (see COMAR 26.21.04.09G). Therefore, no change to the proposed regulations is needed to address this comment

26. **Dick Lahn - Crofton -**The regulations should require that the deeds to all fly ash dump site properties have indicators on the property maps what materials where present at locations of the properties so that in the future, say 20 years from now, if there is a problem with the site there will be information present showing the status of the site when it was a fly ash dump.

MDE Response: See the response to Comment 16 concerning deed amendments.

27. Council of Industrial Boiler Owners (CIBO) - While CIBO generally supports the proposition that CCBs should not be placed near water, CIBO cautions that it should not be adopted as an absolute rule. It is possible that the use of CCBs may not be problematic and may address other long-term environmental issues such as acid mine drainage abatement, mine fire controls, mine subsidence control, mine reclamation, reclamation of water-filled pits, and elimination of hazardous situations. MDE should preserve flexibility to address this issue in the context of site-specific analysis.

MDE Response: The proposed regulations for use in coal mines, COMAR 26.20.24, do not specifically prohibit placing CCBs near water sources. Rather, at COMAR 26.20.24.08D(4)(r) the applicant must provide a narrative description explaining how contamination of surface and ground water will be prevented, and how surface and ground water will be monitored, and the Department will consider the use of CCBs on a site-specific basis. See also COMAR 26.21.04.03B(6) for noncoal mines. No change to the proposed regulations is needed.

28. Four Seasons Community Association - We strongly urge for the inclusion of public hearings and reviews of any modifications to CCB disposal facility operations.

MDE Response: See the response to Comment 15 concerning public hearings.

29. Four Seasons Community Association - We urge the State to require all testing be performed at state-certified laboratories.

MDE Response: The State only certifies laboratories for the analysis of drinking water, not water quality, wastewater or solids analyses. Therefore, no change to the proposed regulations will be made to address this comment.

30. Environmental Integrity Project - MDE's proposal should address potential surface water contamination from CCW disposal. MDE's proposal does not adequately address the potential for surface water contamination from CCW disposal, which may result from hydrogeological connections to polluted groundwater, or from the direct discharge of leachate into rivers and streams. While the proposal requires the collection and treatment of leachate at non-coal mining sites, they do not establish standards for treatment or discharge. The NRC report identified the Faulkner site as an example of the significant environmental damage caused by CCW disposal. The Faulkner disposal site continues to discharge sulfates and heavy metals from leachate treatment pits into Bowling creek, and Mirant's own monitoring data demonstrate that these discharges have degraded water

quality. The discharges from these wastewater pits have never been permitted, and in some cases (e.g., selenium and arsenic) exceed aquatic toxicity criteria under the Clean Water Act, or maximum contaminant levels under the Safe Drinking Act.

Recommendation:
MDE's proposed regulations should close potential loopholes and require the permit applicant to identify the potential for surface water contamination, whether through direct discharge or hydrogeological connection; prohibit any discharges to surface water (including through hydrogeological connection) without a Clean Water Act permit for all CCW disposal and reclamation sites; specify standards for the treatment of leachate prior to its discharge to either groundwater or surface water, and prohibit any discharge in excess of Clean Water Act or Safe Drinking Water Act standards; and require monitoring of downstream surface water and sediment, as well as groundwater, on at least a monthly basis for pH, sulfates, and all metals known to leach from coal combustion waste.

MDE Response: Existing Maryland regulations already provide adequate enforcement remedies of water pollution control laws and regulations. Any discharge of treated leachate from a CCB site will be addressed pursuant to separate permitting authority under the requirements of COMAR 26.08., NPDES/State Discharge Permit, that do require compliance with established surface and ground water quality standards. The proposed regulations do include prohibitions for discharges from CCB sites to waters of the State unless in compliance with a valid discharge permit. See COMAR 26.04.10.03B(3). No change to the proposed regulations is needed to address this comment.

31. Environmental Integrity Project - MDE regulations should require bonds sufficient to cover long-term monitoring and remediation costs. The risks associated with CCW disposal may not become apparent for many years; once metals or other pollutants contaminate groundwater or surface water, it may take years to contain and minimize the damage. Maryland's Department of Natural Resources has estimated that it will take decades to restore the natural pH of waters contaminated with acid runoff from the Faulkner site. The NRC report cautions that hydrogeology is not an exact science, and "it may take many years before groundwater contamination from CCR mine disposal reaches downgradient monitoring well." While NRC was unable to reach consensus on the appropriate length of time for monitoring and liability, the report concluded that "the presence of high contaminant levels in many CCR leachates may create human health and ecological concerns at or near some mine sites over the long term."

Recommendations:
Permit applicants should be required to assume the cost of long-term monitoring, and to post a bond to cover the potential costs of remediation. MDE has proposed releasing the bond at mine reclamation sites five years after closure. The time period for post-closure liability needs to be extended, given that contamination from CCW sites may spread slowly over long periods of time. The proposed regulations should clearly state that generators of CCW, and not just the owners or operators of landfills or mining reclamation sites, are responsible for cleanup.

MDE Response: Bonds are already required for non-governmental landfills, including industrial waste landfills, and must be posted before the refuse disposal permit is issued. The amount is established in statute which cannot be altered by the proposed regulations. Permit holders and/or property owners generally assume the responsibility for the cost of monitoring the site, and for any remediation that is required. For landfills, the monitoring and post-closure period can be extended beyond five years by MDE if necessary. See also the response to Comment 13 concerning generator liability. As for the mining laws and regulations, generally the bond amount and release provisions are found in the mining laws and may not be changed without legislation. However, COMAR 26.21.04.09 allows MDE to extend the time period for the bond if necessary. No change to the proposed regulations is needed to address this comment.

32. Anne Arundel County - At least one aspect of CCW disposal protection requires legislative action. The statutory limit of $1250 per acre for mining performance bonds is entirely inadequate. I have had legislation introduced to the General Assembly to remove this cap.

MDE Response: The legislation to increase the bond amount or remove the cap was not passed by the General Assembly in 2008 and the bond amount remains the same. Whether there will be an effort to increase the bond amount or remove the cap in the next General Assembly session is undetermined at this time.

33. Russell DeHart - A. The proposed regulations do not establish any public hearings or review process. The approval, operation, and monitoring of a CCB disposal facility has a significant impact on the quality of life of the surrounding community. In the case of the Turner and Waugh Chapel pits, nearby homeowners cannot drink their water. To shut the public out of deliberations that can have such an impact on their life is unacceptable. Hence, we strongly urge for the inclusion of public hearings and reviews of any modifications to CCB disposal facility operations.
B. The proposed regulations do not require facilities authorized to dispose CCBs before April 1, 2008 to implement the new controls specified in the regulations when such facilities seek to expand their operations. Rather, MDE simply reserves the right to impose additional controls or requirements when notified in writing of the expansion of such operations. The fact that a CCB disposal facility already exists in an area should not deny those citizens the protections that will be enforced throughout the rest of Maryland. Therefore, we strongly urge for the requirement of expanded facilities to meet the new regulations.

MDE Response: A. See the response to Comment 15 concerning the public hearing process.

B. The proposed regulations allow MDE to take appropriate actions to ensure that residents near existing facilities are protected, and the proposed regulations afford us the ability to do so, but the methods used may in fact have to be different than those proposed for new facilities. For example, where a large fill has already been emplaced, a liner cannot be placed under the existing mass, however, MDE could require groundwater

pump-and-treat or other methodology to ensure that public health is protected. Moreover, under the regulations, appropriate controls and requirements can be imposed on expansions of existing disposal sites. Therefore, no change to the proposed regulations is needed to respond to this comment.

34. Robert Scanlon - Crofton - Increase public notification and participation rights and require expansion and operation of existing facilities to meet new requirements.

MDE Response: See the response to Comment 15 concerning public notification and participation rights.

35. Environmental Integrity Project - MDE's proposed regulations should establish enforceable standards for the disposal of CCW waste.

Recommendation:
MDE's regulations should set forth minimum standards that permit applicants must comply with in order to utilize CCW in a mine reclamation project. In addition, MDE should specifically allow for more stringent regulation in areas that are environmentally sensitive or where ground or surface water contamination is likely.

MDE Response: MDE believes that the proposed regulations do set forth the standards that applicants must comply with and allow MDE to impose additional standards where applicable. MDE notes that as part of the application process, geologic and hydrologic information is required to be submitted for disposal of CCBs in landfills, including groundwater elevation data, maximum predicted groundwater levels, geologic information, and background water quality data, as well as any other information that MDE may require (see COMAR 26.04.07.19 and especially .20). These requirements are part of the proposed regulations for noncoal mines as well, which includes sand and gravel pits (see proposed COMAR 26.21.04.04). Geologic and hydrologic information is taken into account by MDE when making determinations relating to site suitability and design considerations. Therefore, no changes to the proposed regulations are needed to accommodate this comment.

36. Environmental Integrity Project - The disposal of CCW should require a permit. While regulations provide the essential legal framework, decisions to authorize CCW disposal will require thorough evaluation of potential sites, including the subsurface flow of groundwater; proximity to drinking water wells, rivers, and streams; the potential reaction between CCW and local soils; and many other factors. Local communities will be asked to accept the placement of millions of tons of waste in their neighborhoods, and to live with the risk that acids and toxic metals from that waste may escape into their environment. These are exactly the kinds of decisions that ought to be made with the full participation of those most affected. The very first page of the NRC report notes that use of coal combustion waste for reclamation may prove beneficial if properly regulated, but only if "the regulatory process for issuing permits includes clear provisions for public involvement."

Recommendation:
All forms of CCW disposal, including the use of CCW to reclaim abandoned or active coal mines, should require a permit. The regulations should provide opportunity for notice and comment regarding draft permit conditions, and a public hearing if requested. MDE should be required to respond to any comments, and the public should be provided the opportunity to contest the permit through the administrative process.

MDE Response: MDE is supportive of the need for citizen involvement in permitting activities. MDE notes that both disposal and mine reclamation activities already require a permit from MDE, and that the application process for these incorporate the public involvement (e.g., public meetings and/or hearings) that is specified in Maryland law for the different types of approval involved. The regulations cannot depart from the public hearing requirements of the statute. See also the response to Comment 15 concerning public notice and hearings. Therefore, no change will be made to the proposed regulations to address this comment.

37. Environmental Integrity Project - MDE's proposal should require effective monitoring of minefills and CCW disposal sites. MDE's proposal should establish clear criteria for determining the placement, frequency, and duration of monitoring at proposed CCW disposal sites. The NRC 2006 report was highly critical of the lack of monitoring at CCW minefill sites across the United States. "Based on its reviews of CCR post-placement monitoring at many sites visited during the course of this study, the committee concludes that the number of monitoring wells, the spatial coverage of wells, and the duration of monitoring at CCR minefills are generally insufficient to accurately assess the migration of contaminants."

Recommendations:
While recognizing that monitoring may be affected by the site characteristics, MDE should establish standards that can be used to determine the adequacy of monitoring. At a minimum: Monitoring should be adequate to characterize the background levels of contamination, estimate the direction and speed of groundwater flow, and expose any hydrogeological connections to surface water. Surface water monitoring should be required for any rivers and streams within reasonable proximity of the disposal site. Monitoring should be able to detect contaminants at levels well below the human health and aquatic toxicity standards, and should be required at least once a month during disposal operations. As recommended by the NRC, monitors should be placed where they can provide early warning of potential contamination. Some contaminants may mobilize from CCW over long periods of time. For that reason, monitoring should be conducted for at least ten years after the closure of a CCW disposal site, and for longer periods of time if significant contamination is found.

MDE Response: MDE requires groundwater monitoring at industrial waste landfills. COMAR 26.04.07.20D(2) states :

"(2) The Department may require the permit holder to periodically collect and analyze ground and surface water samples at the permitted site and to report the results to the Department. The Department may furthermore specify the:
(a) Number and location of the sampling points;
(b) Frequency of the analyses;
(c) Analytical procedures;
(d) Materials to be monitored;
(e) Frequency of reporting."

Detailed monitoring requirements are included in landfill permits, which are based on the hydrologic information submitted as part of the permit application, and which further specify that a plan has to be submitted that is required to be updated at least every five years, or more frequently as the situation at the landfill changes (e.g., if it expands as part of the approved plan and additional monitoring wells are needed).

EIP also suggests that monitoring be performed at least monthly. MDE suggests that this is inappropriate for groundwater monitoring in geohydrologic regimes encountered in Maryland, where groundwater flow velocities are typically one to a few dozen feet per year. Excessive sampling can degrade the monitoring system (e.g., by increasing turbidity and in rock wells not allowing sufficient time for recovery). Moreover, it is noted that the standard frequency required by federal regulations for municipal and hazardous waste landfills is twice per year, which is quite adequate for most geologic settings.

EIP also comments that monitoring should occur after facility closure for at least 10 years. MDE notes that the regulation currently ends the postclosure period after 5 years unless there is reason for the Department to extend it. In fact, MDE has extended the monitoring period for several closed rubble landfills when water quality conditions warranted and can do so for industrial waste landfills.

In addition, MDE will require a monitoring plan for both surface and groundwater at coal mining sites in Regulation .08D(4)(r). MDE already has authority to develop specific permit conditions to amplify or clarify site specific conditions. Current coal mine sites are required to conduct a cumulative hydrologic impact assessment to assess water quality and quantity impacts to receiving streams and groundwater. For noncoal mine sites, monitoring will be required by COMAR 26.21.04.07. MDE will continue to monitor sites using CCBs and will make adjustments as needed based upon empirical data collected. MDE will also continue to interact with other states to compile data and assess impacts. Post-mining monitoring will be for a minimum of five years but may be extended by the Department. Therefore, no changes to the proposed regulations are needed to address this comment.

38. Four Seasons Community Association - The proposed regulations do not include detailed methodology or criteria by which to judge the impact of CCB disposal operations on air quality. Both water and air quality concerns are discussed in the proposed regulations, yet only water quality test schedules and criteria are defined.

Moreover, currently air quality at these sites is currently determined purely by visual inspection. We strongly urge for the inclusion of a detailed air monitoring plan parallel to those put forth for the monitoring of water quality. New regulations should, at a minimum, require the collection of air samples on a prescribed basis. In the event the regulations do not include quantitative air quality standards, the data from air samples will at least be available for analysis.

MDE Response: As a general policy, MDE does not feel it is necessary to require an air pollution source to perform facility specific ambient air monitoring unless there is some compelling evidence that the facility is causing or contributing to nearby violations of a NAAQS or violations of permit standards designed to control HAPs. It is the established role of MDE's Permitting and Compliance Programs to impose emission control measures and ensure operational compliance such that a specific facility does not cause such NAAQS violations as a legal condition of operation.

However, if concerns about the local air quality impacts of a specific facility are raised by a nearby community or other interested party, MDE staff can develop a reasonably good idea of what type of results to expect from monitoring around a specific facility based on the experience gained from many years of operating a comprehensive network of ambient air monitors throughout the State, knowledge of and familiarity with the scientific literature on ambient air monitoring, knowledge of local meteorology, knowledge of the facility operational characteristics and consultation with other monitoring and public health experts. Additionally, MDE (and/or the source owner) can also make a determination of perimeter or off-site concentrations of air pollutants surrounding a facility by performing a dispersion modeling study of emissions from the facility and adding the facility's contribution to existing background concentrations. If the results of these exercises point to a problem, then further appropriate action, including additional monitoring, may be required.

Monitoring the impact of a specific facility on the air quality of a nearby residential area is not as straightforward as placing a monitor between the facility and the residential area. In reality, a network of monitors around the perimeter of the facility and at varying distances between the facility and the community in question is required to develop a complete picture of a complex set of influences including local traffic and the contribution of other sources, both local and regional.

The design of an appropriate air monitoring network is crucial to the success of any monitoring effort. Establishing an air monitoring network would not guarantee the ability to definitively assign source culpability because of a variety of factors.

- Appropriate monitoring and analytical methodologies must be evaluated and selected.
- Logistical considerations are numerous and may include providing a power source to each monitor and possibly an environmentally controlled shelter to house the monitoring instrumentation (dependent on the type of monitoring deemed necessary).

- Meeting appropriate monitor siting criteria at each monitor location, and making adequate provisions for monitoring site access and security (especially from vandalism and tampering).
- Additionally, on-site or nearby meteorological monitoring is also required in order to perform meaningful interpretive analysis of the air monitoring data.
- Rigorous quality assurance and quality control measures must also be implemented and evaluated for both the air quality and meteorological monitoring in order to ensure the integrity of the data.

Particulate matter monitoring of any type (e.g. TSP, PM10, PM2.5) alone would not provide conclusive evidence that a higher measured concentration downwind of the CCB placement site originated from the CCBs. This would be especially true for a CCB site located near a residential area, near an area where other industrial activity is routinely occurring, or near a heavily traveled roadway. Elevated particulate concentrations could be due to diesel emissions from trucks transporting the CCBs or some other local source like a backyard barbecue, re-entrained road dust, other local or through traffic, industrial activities, or even a wood stove, although particulate monitoring alone could not prove this conclusively either. This is illustrative of the difficulty in assigning source contribution based on a limited monitoring effort.

The ability to discern whether or not CCBs are the source of elevated particulate levels is particularly difficult because there is no quantitative measurement technique available for CCBs as an entity unto itself. At best, the presence of CCBs in an ambient air particulate or surface dust sample can be confirmed through the use of scanning electron microscopy by virtue of the characteristic spherical morphology of fly ash particles. What this means is that if a violation of the PM-10 or PM-2.5 NAAQS was measured near a CCB placement site, there may be no way to definitively determine the contribution of CCBs to the measured mass concentration of particulate matter.

A qualitative assessment of whether an individual sample was enriched with fly ash particles compared to another sample could also be performed by scanning electron microscopy, but definitive source assignation would still prove problematic because fly ash is ubiquitous in the environment. Since the beginning of the industrial revolution, with the advent of high temperature combustion boilers and their use in transportation, steam and electric power generation and many other industrial applications, fly ash has been emitted into the atmosphere in copious quantities and deposited to the earth's surface. Due to their composition, fly ash particles are chemically resistant and preserve well in the environment. Only in the last thirty or so years has relatively effective particulate matter control technology been applied to these sources, and these still do not capture all of the fly ash particles generated.

The spatial distribution of fly ash particles is similar to the atmospheric deposition of other long-range transported air pollutants such as sulfates. They have been used as indicators of the presence of industrial pollution in remote parts of the ocean and serve as time markers in soil science erosion and sedimentation studies all over the world. Therefore, the presence of fly ash particles in an ambient air particulate or surface dust

sample is not unusual and generally not indicative of the influence of any individual contemporary source.

MDE's experience operating a statewide ambient air monitoring network and knowledge of reasonable precautions to control fugitive dust that would be incorporated as permit conditions would suggest that, at a responsibly operated CCB facility, source oriented monitoring would not likely violate either the PM10 or PM2.5 daily standards (except during region-wide particulate pollution episodes). In fact, since the CCBs originate from material captured in a baghouse and boiler bottom slag, it is reasonable to assume that the fraction of CCB material less than PM10 would be extremely small.

Additionally, a CCB placement site is not a typical source of air pollution that is similar to traditional industrial sources with smokestacks. Emission rates from traditional industrial sources can be quantitatively measured and set at a level that will not cause violations of a NAAQS. In contrast, fugitive dust from CCB sites would be an intermittent problem, exacerbated under certain operating and weather conditions that can be effectively addressed through mandated implementation of a rigorous dust management program and ensured through effective enforcement policies. For these reasons, no changes to the proposed regulations are needed to address this comment.

39. Environmental Integrity Project - MDE also needs to establish air monitoring protocols for CCW disposal sites, as fugitive dust from fly ash and other combustion residues can be both dangerous and annoying to nearby communities.

MDE Response: MDE concurs that fugitive dust from fly ash has the potential to cause a nuisance to nearby residents. However, the regulation at COMAR 26.04.10.03A specifically prohibits the source from creating a nuisance or air pollution while engaged in the disposal, storage, transportation, processing, handling, or use of CCBs. The regulation also requires that the source take reasonable precautions to prevent particulate matter from becoming airborne. These preventive measures are specified in COMAR 26.11.06.03D and may include but are not limited to the following:

> (1) Use of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads, or the clearing of land.
>
> (2) Application of asphalt, oil, water, or suitable chemicals on dirt roads, materials stockpiles, and other surfaces which can create airborne dusts.
>
> (3) Installation and use of hoods, fans, and dust collectors to enclose and vent the handling of dusty materials. Adequate containment methods shall be employed during sandblasting of buildings or other similar operations.
>
> (4) Covering, at all times when in motion, open-bodied vehicles transporting materials likely to create air pollution. Alternate means may be employed to achieve the same results as would covering the vehicles.

(5) The paving of roadways and their maintenance in clean condition.

(6) The prompt removal from paved streets of earth or other material which has been transported there by trucks or earth moving equipment or erosion by water.

Finally, MDE disagrees with the notion that an air monitoring network is necessary in order to enforce the nuisance regulation. See the response on this issue in Comment 38. However, as stated above, MDE retains the authority to require a source to install monitors on a case-by-case basis if it is felt that nuisance particulate may cause or contribute to a violation of the NAAQS. No changes to the proposed regulations are needed to address this comment.

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40. There is no requirement for ongoing air quality testing.

MDE Response: See the response to Comment 38 concerning air quality testing.

41. Although you are monitoring, supposedly, you have no standards for monitoring the air quality. You have not been sampling the air.

MDE Response: Federal law requires conformance with federal provisions to install, operate, and maintain an air monitoring network that provides continuous air monitoring data of criteria pollutant concentrations in the ambient air. See the response to Comment 38 for additional information on air sampling.

42. "What is going to be done at this site to monitor air pollution? Does the MDE have any kind of sensors you could post around the site to monitor what kind of dust is at the site. During the summer/drought season it is a dust cloud. It affects all the 55+ owners as well as the children playing outside at the daycare center. Airborne fly ash is as much of a concern to all here as much as the groundwater contamination."

MDE Response: The need for on-site monitoring would be assessed on a case-by-case basis. See the response to Comment 38 for additional details on air quality monitoring.

43. "We were promised that the air would be monitored. Looking at it is not monitoring. There is equipment that could be utilized. How about the air pollution we are breathing every day? You tell me you don't have the equipment, that it's very expensive, are we going to put a dollar value on the health of our citizens?

MDE Response: Please see the responses to Comments 38 and 39 above concerning air monitoring.

44. There is tremendous expense for monitoring the fly ash site. Is it possible to have the applicant pay for sensors? We need quantitative techniques for monitoring air quality.

MDE Response: MDE may impose on the permittee additional permit conditions as needed, regardless of the cost, on a case-by-case basis. Other considerations for developing an air monitoring network are discussed in the response to Comment 38.

45. The air quality should be an important focus. Rather than just reasonable measures to control dust, there should be a strict permitting regime for air emissions. A permitting regime would possibly model the activities from the site and therefore determine the potential for air emissions. Looking at the number of trucks, the wheels on the trucks, the types of permit conditions rather than operating under certain visual inspections or general visual inspections or just responding to complaints. There should be a particular manner of monitors. The community should know the level of the fugitive dust escaping from the dump site. You can measure the fly ash and have a lab analysis done with the settled dust off of the site.

MDE Response: Factors that MDE would consider before implementing an air monitoring program are discussed in detail in the response to Comment 38.

46. Crofton First - Specifically, proposed regulations should explicitly include**:**
A. Prevention of interference with attainment or maintenance of ambient air quality standards at any offsite location based on maximum potential emissions.

MDE Response: Please see the responses to Comments 38 and 39.

B. Permit application to include description and frequency of practices that will be employed to comply with air quality regulations to specifically prevent a condition of air pollution.

MDE Response: By regulation, a person is required to take reasonable precautions identified in COMAR 26.11.06.03D to prevent a nuisance or an air pollution episode. See also the response to Comment 39 concerning preventive measures applied by MDE regarding air pollution.

C. For sites bordering or within 2000 feet of residential properties, require permit application to include monitoring of particulate concentrations in ambient air at multiple locations along the site perimeter.

MDE Response: The appropriateness for requiring the installation of a site-specific air monitoring network is discussed in the response to Comment 38.

D. Water truck and watering methods shall be available according to the regulations, but also applied to prevent the release of dust from operations. If the water method is not effective in suppressing dust, then operations must stop.

MDE Response: While COMAR 26.11.06.02D allows for the use of water or chemicals for controlling dust, it is only one of several options for dust control mentioned in the regulation. As such, persons could avail themselves of any of the other specific methods

mentioned to suppress fugitive dust. Additionally, the regulation does not restrict the use of any other unspecified method to control nuisance dust. Hence, it would be inappropriate for the Department to prematurely require a cessation of operation only because a particular control measure being employed is ineffective.

E. Water conditioning of the fly ash is mentioned in the regulations prior to leaving the generating facility. Specific criteria should be considered to ensure effectiveness of moisture content as it relates to fugitive dust control, and verification at both the leaving (generating) station and at the receiving facility, so that dust generation can be more effectively controlled and monitored."

MDE Response: Affected sources will have an array of options available to prevent the dispersement of nuisance particulate. It would be inappropriate for MDE to either limit those options or to be overly prescriptive on which control measure a source may want to implement.

47. **Crofton First** - Clear and unambiguous requirement to temporarily halt any further fly ash dumping once environmental monitoring reveals probable contamination of any water, or air quality standards due to fly ash. Further disposal of fly ash should not resume at the contaminated location until the site is fully remediated and all air and water quality standards are met.

MDE Response: Should any violations occur, MDE will assess the severity of the violation on a case by case basis, and the extent to which public health and the environment were impacted by the violation. Based on this assessment, appropriate enforcement and/or remediation measures will be imposed on the permittee. Termination of the acceptance of CCBs might be a possible remedy if MDE takes an enforcement action, but MDE notes that halting the acceptance of fly ash may not be the appropriate remedy in every instance, nor may continuing the operations on the site always negatively impact the remediation actions required by MDE. Therefore, no change is needed to the proposed regulations to address this comment.

48. Crofton First - Department must be fully funded, with adequate staff, equipment (including air testing) and established protocols to effectively implement any new statutory and regulatory protections before any new permit application, or expansion of existing fly ash disposal be considered. Increase in permitting fees to offset new application review, monitoring, and enforcement costs should be implemented.

MDE Response: The level of staffing and funding for the CCB program is established through the MDE budget process and the authority to require fees must be established by law. Not all of the required permits have an associated fee (for example, there is no permit fee for refuse disposal permits authorized by statute). MDE agrees that additional funding is desirable to fully implement the new regulations and will continue to seek legislative funding for the program. In 2008, MDE submitted a bill to the General Assembly that would have allowed MDE to charge a fee to CCB generators to fund the

CCB programs, but the bill was not passed by the General Assembly. In the interim, MDE will implement the program with existing resources to the extent practicable.

49. Crofton First - Public access and/or public reporting should be automatically provided on all water and air exceedance data, with any interpretive studies and quarterly reports to be placed in a local library near the site, or made available on the internet.

MDE Response: All reporting requirements are maintained at the offices of MDE and are generally available to the public through a standard Maryland Public Information Act request. See Comment 20B.

50. Crofton First - For future fly ash sites- Evaluation to determine the degree of future growth allowed under current zoning and long-range planning surrounding site, with exposure impact studies (air and water) to consider maximum full-growth scenarios for anticipated human exposure and potential water impacts.

MDE Response: Informational needs by MDE for future fly ash sites will be reviewed on a case-by-case basis. Zoning and planning issues are normally under the jurisdiction of the local county and not MDE. For example, as part of the review process for a landfill permit, MDE must obtain a written statement from the local government that the proposal is in conformance with local zoning and land use requirements before proceeding past the initial phase of the review process. Therefore, no change to the proposed regulations is needed to address this comment.

51. **Crofton First -** "Operations at all Maryland sites prior to April 1, 2008 should be evaluated for adequate water and air quality controls."

MDE Response: Since December 1, 2007, as part of MDE's ongoing CCB initiative, MDE has conducted inspections at 32 sites where CCBs were disposed of or used in the past or are being placed or stored at the present time. The sites inspected include 21 surface coal mine reclamation projects located in Garrett and Allegany counties; 3 CCB monofill disposal sites owned by Mirant located in Charles, Prince George's and Montgomery counties; 3 structural fill/surface mine reclamation sites operated by Constellation located in Anne Arundel and Baltimore Counties; 1 CCB storage site at Indian Head Naval Surface Warfare Center in Charles County; Millersville Landfill in Anne Arundel County; Allegany Power's R. Paul Smith Power Plant in Washington County; I-695 Sparrows Point roadway embankment fill in Baltimore County; and the Lombardi Beach Park in Anne Arundel County. MDE evaluated available groundwater and surface water quality data to determine the potential for water pollution and also checked for fugitive air emissions during the inspections. No dust control problems were noted during these inspections. Most sites were found to be compliant with current operating/regulatory requirements. The need for further compliance inspections/corrective action at certain sites where water pollution issues have been identified will be determined by MDE on a case-by-case basis.

52. **Crofton First – Tim Berkoff** - Sites on top of an existing impaired aquifer, that is already known to be contaminated, or a site with already established air quality degradation due to industrial operations should not be used as a site for fly ash disposal.

MDE Response: Crofton First recommends that CCB sites should not be sited where contamination of air or water has already occurred due to past or adjacent industrial activity. This implies that only virgin sites could be used for CCB disposal. That concept runs counter to "Smart Growth" environmental planning, which tries to keep clean sites clean and to reuse industrial sites for appropriate industrial land uses. Therefore, no change to the proposed regulations is needed to accommodate this comment.

53. Dick Lahn - That Air Quality enforcement and data collection will be done visually is sheer folly on its face.

MDE Response: Visual inspections to ensure that reasonable precautions are used by facilities to control dust are standard practices employed by federal and state regulators throughout the country. Visual inspections are not limited to the observance of airborne dust, but also to monitoring practices and procedures being used at the site to ensure that emissions are controlled.

54. Crofton First - The State Department of Health should take an active, not passive role as it has, to determine the health of the people directly effected by toxic water and fine particulate air exposure.

MDE Response: The Maryland Department of Health and Mental Hygiene (DHMH) is an active partner in coordinating public health responses between State and local agencies and in evaluating public health concerns. DHMH has engaged MDE and the Anne Arundel County Health Department regarding the public health implications of the Gambrills site and questions concerning the investigation of nearby populations. The fact sheet, "Coal Fly Ash and Its Health Risks" (http://www.mde.state.md.us/assets/document/AA_Fly_Ash_QA.pdf), represents a collaborative effort and consensus among health experts at MDE, DHMH, and the County Health Department.

55. **Robert E. Smith - Crofton** (Oral Comments given at the February 5, 2008 Public Hearing) Concern about health impact of fly ash, especially exposure to heavy metals such as arsenic.

MDE Response: The U.S. EPA has conducted several technical analyses of the health risks associated with metals released from CCB disposal facilities. These are available at the EPA website, *Supporting Materials: March 1999 Report to Congress - Wastes from the Combustion of Fossils Fuels* (http://www.epa.gov/epaoswer/other/fossil/fsltech.htm) and from the docket to the *Notice of Data Availability on the Disposal of Coal Combustion Wastes in Landfills and Surface Impoundments* (docket ID EPA-HQ-RCRA-2006-0796, http://www.epa.gov/fedrgstr/EPA-WASTE/2007/August/Day-

29/f17138.htm). Other reports of interest include *Constituent Screening for Coal Combustion Wastes* (U.S. EPA/RTI, October 2002) and *Managing Coal Combustion Residues in Mines* (National Research Council 2006, http://books.nap.edu/openbook.php?record_id=11592&page=R1). These analyses have been and are being used to support regulatory decisions regarding CCBs.

EPA has determined that metals are the CCB constituents of primary concern. In order to address them appropriately, EPA has developed a national dataset of CCB landfills and models of high-end and mid-range exposure assumptions to estimate the risks associated with metals in both groundwater and aboveground pathways. Eighty percent of CCB disposal sites are co-managed, meaning they combine high-volume wastes (e.g., fly ash and bottom ash) with low-volume wastes (e.g., coal pile runoff). EPA's risk analyses since 1998 have focused on the risks from metals potentially released from co-managed facilities.

Arsenic presents the highest potential for cancer risk in all co-managed scenarios. EPA predicts a high-end risk of 3 in 10,000 for the lifetime ingestion of arsenic that potentially enters local groundwater from unlined landfills. Mid-range exposures create considerably less risk at 4 in 10 million. The current arsenic standard for public drinking water systems creates a risk of 1-6 in 10,000.

To address the release of CCBs through dust and surface runoff from CCB landfills, EPA uses the "child of a farmer" model to represent the worst case scenario. The analysis assumes that the child is exposed simultaneously and for multiple years to local farm products (dairy, beef, fruits and vegetables), incidental ingestion of soil and dust, and inhalation of air-borne particles. Arsenic is again the most significant element, creating cancer risks of 2 in 100,000 for high-end exposures and < 1 in 1 million for mid-range exposures. Direct inhalation of air-borne CCBs creates negligible risks well below 1 in 1 million.

Non-cancer risks from CCB constituents in groundwater are typically below a hazard quotient of 1, a value indicating safe long-term use. The worst case scenario regarding non-cancer risks from dust and runoff is again represented by the child of a farmer. Thallium and barium may create the highest risks, with hazard quotients of 1.

The risk consequences of disposing CCBs in mines are less clearly defined than for landfills, although there are clear parallels with respect to the contamination of local groundwater. Risk estimates have also been developed for plants and animals. Boron is notably toxic for plants. In general, however, CCB landfills appear to pose only low risks for ecological receptors.

In summary, national studies project modest increases in risk in high-end exposure scenarios and no increases under average or mid-range conditions. Individual sites may have special conditions that increase or decrease the potential for off-site exposure. The Department believes the proposed regulations will help prevent CCB exposures and health risks. No changes to the proposed regulations are needed to address this comment.

26.04.07 - Solid Waste Management

56. Rich & Henderson - "This Amendment arguably exceeds the Department's authority by altering the intent of the General Assembly when it adopted the Pozzolan Act in 1974. Putting aside that issue, the revised definition of "ashes" creates an inherent conflict with the general solid waste management law and regulations. It gives Coal Ash a unique status among materials, chemicals or substances, implying that "ashes" could include coal combustion byproducts not used in accordance with the new regulations, even if the material is not discarded, disposed or otherwise managed as a waste. MDE's authority under the state Solid Waste Management law is limited to regulation of "solid waste". If a material is not a solid waste, whether it is Coal Ash or any other form of ashes, it cannot be regulated as a solid waste."

Proposed Solution:
.02B.(3) [It] "Ashes" does not include [pozzolans as defined in Natural Resources Article, §7-464, Annotated Code of Maryland]:

(i) Pozzolan as defined in Environment Article, §15-407, Annotated Code of Maryland, if the pozzolan is used in accordance with Environment Article, §15-407, Annotated Code of Maryland [proposed deletion: ", and COMAR 26.04.10]; or
(ii) Coal combustion byproducts as defined in COMAR 26.04.10, if the coal combustion byproducts are used in accordance with COMAR 26.04.10.

MDE Response: MDE disagrees that the amendment exceeds the Department's authority and alters the legislative intent of the General Assembly in adopting the Pozzolan Act.

Part of the amendment is to correct an obsolete reference to the Natural Resources Article because the Pozzolan Act was moved to §15-407 of the Environment Article.

In addition, rather than altering the intent of the Pozzolan Act, the regulations and the amendment implement the Pozzolan Act. The Pozzolan Act recognizes certain uses of pozzolan. The amendment, and the proposed regulations in general, carry out the provisions of the law by describing the requirements for the uses. The regulations do not prohibit or alter the uses specified in the Pozzolan Act. The Pozzolan Act explicitly provides that the uses "shall comply with all silt control regulations and permit requirements of the Department". The Department has ample authority as cited in the regulations to adopt rules and regulations to carry out provisions of law that are within its jurisdiction to prevent pollution and to protect public health and the environment. Please see the Authority sections of the regulations for citations to the Department's authority.

The Department also disagrees that the amendment creates an inherent conflict with the general solid waste management law and regulations. Rather, the amendment recognizes that certain materials may, on the one hand, be solid waste if they are disposed of or abandoned or, on the other hand, not solid waste if they are removed from the waste stream by being used or recycled. This is consistent with State law. Please see the

Recycling law at §9-1701, et seq. of the Environment Article, Annotated Code of Maryland. This law and specifically the definitions of "recyclable materials" and "recycling" recognize materials that "would otherwise become solid waste" if they are not "returned to the marketplace in the form of raw materials or products." Therefore, the Department declines to make the requested change.

26.04.10 Management of Coal Combustion Byproducts

.02 Definitions

57. PPRP - The EPA solidification/stabilization definition (Attachment A) should be included.

Attachment A
Solidification/Stabilization

From: EPA, 2000. Solidification/Stabilization at Superfund Sites. U.S. Environmental Protection Agency's Technology Innovation Office under EPA Contract Number 68-W-99-003.

The term "solidification/stabilization" refers to a general category of processes that are used to treat a wide variety of wastes, including solids and liquids. Solidification and stabilization are each distinct technologies, as described below (EPA, 1997, Portland Cement Association 1991):

• Solidification - refers to processes that encapsulate a waste to form a solid material and to restrict contaminant migration by decreasing the surface area exposed to leaching and/or by coating the waste with low-permeability materials. Solidification can be accomplished by a chemical reaction between a waste and binding (solidifying) reagents or by mechanical processes. Solidification of fine waste particles is referred to as microencapsulation, while solidification of a large block or container of waste is referred to as macroencapsulation.

• Stabilization - refers to processes that involve chemical reactions that reduce the leachability of a waste. Stabilization chemically immobilizes hazardous materials or reduces their solubility through a chemical reaction. The physical nature of the waste may or may not be changed by this process.

For S/S applications at Superfund sites, the regulatory definition of stabilization under the Resource Conservation and Recovery Act (RCRA) may be relevant to a project. Under the Land Disposal Restrictions (LDR) program (40 CFR part 268), stabilization is the required treatment standard for certain types of waste. In addition, stabilization may be used to render a RCRA hazardous waste (defined under 40 CFR part 260) non-hazardous prior to disposal. RCRA defines stabilization (40 CFR 268.42) as "[a process that] involves the use of the following reagents (or waste reagents): (1) Portland cement; or (2) lime/pozzolans (e.g., fly ash and cement kiln dust) - this does not preclude the addition of

reagents (e.g., iron salts, silicates, and clays) designed to enhance the set/cure time and/or compressive strength, or to overall reduce the leachability of the metal or inorganic."

MDE Response: These definitions are considered to be unnecessary because, under the proposed regulations, use in coal mine reclamation would require alkaline coal combustion byproducts, which is considered stabilized, and CCB use in noncoal mine sites would require a liner and leachate collection system, which renders the need for stabilization/solidification moot. However, MDE will keep this comment in mind for consideration in connection with possible beneficial uses that may entail the placement of CCBs in unlined situations.

B(2) "Beneficial Use"

58. Crofton First – Tim Berkoff - (2)(a) "Beneficial use" should not involve disposal of fly ash in any situation in which it comes into direct contact with the environment in "free-form." The use should be evaluated further as possibly beneficial only when a bonding agent of some kind is used to properly bind the material to prevent unacceptable exposure. Uses for landfill, structural/building fill, soil improvement, agriculture, soil conditioning, or land reclamation should not be considered beneficial. Even with a bonding agent, we still have questions for some uses such as in carpeting, where exposure risk is increased due to high levels of frictional wear and routine human contact. The use of fly ash as a beneficial use in cinder block, concrete, and asphalt would appear to be acceptable beneficial uses since a bonding agent is utilized and physical/frictional contact is minimal.

MDE Response: This comment is noted, but MDE believes this discussion is more properly held for MDE's future development of beneficial use regulations. Therefore, no change to the proposed regulations is needed to address this comment.

59. Constellation – (2)(a): The text of paragraph (2)(a) is ambiguous. It could be read to suggest that all beneficial uses must be manufacturing uses. Alternatively, and more correctly we believe, it may be understood to provide for a manufacturing associated use or, as an entirely separate matter, a substitute for a raw material or commercial product. We believe that this was the intention, as some substitutions for a raw material or commercial product are in a non-manufacturing context and should be a "beneficial use." To correct the ambiguity, we propose adding a comma as noted, to distinguish the separation of the clauses.

MDE Response: The intent of the regulation is that there are two separate possible uses: (1) use in a manufacturing process to make a product, and (2) use as a substitute for a raw material or commercial product. To clarify, we will add the comma as requested. As further clarification, we have added the phrase "in either case" after the word "which" to make clear that the qualifying phrase at the end of the sentence modifies both uses: (1) use in a manufacturing process to make a product, and (2) use as a substitute for a raw material or commercial product. Please see the further changes to paragraph 2(a) in Comment 60.

60. Constellation - (2)(a): With respect to the standard *"does not contribute to the adverse effects to the public health or the environment,"* this is problematic. It arguably establishes a zero tolerance for any arguable contribution to adverse effects of any type, when the beneficial coal combustion byproducts use may be less harmful than the raw material or commercial product that it is replacing. The coal combustion byproducts should be on an even playing field with the competing raw materials or commercial products when evaluating potential risks and benefits. An absence of risk may not be the most desirable standard for society or for the end users. For example, one may argue that certain fertilizer products *"contribute to adverse effects to . . . the environment."* Coal combustion byproducts used in the same way with the same (or lesser) effects should not be excluded from serving as fertilizers as a beneficial use. To address this problem, we suggest that the regulation exclude uses that *"increase"* adverse effects.

Rich & Henderson - (2)(a): Delete *"which does not contribute to adverse effects to public health or the environment."* This language injects an unacceptable element of subjectivity.

PPRP - (2)(a): Amend sentence with *"…as determined by the Department."* This phrase could give the Department latitude to evaluate affects in the context of the demographic and geologic setting.

MDE Response: MDE has considered the various comments relating to the definition of beneficial use. To address the concerns raised, paragraph 2(a) is being amended to read: "'Beneficial use' means the use of coal combustion byproducts in a manufacturing process to make a product, or as a substitute for a raw material or commercial product, which, in either case, does not create an unreasonable risk to public health or the environment as determined by the Department."

MDE considers PPRP's suggestion to insert "as determined by the Department" to be a valuable addition. With respect to Rich & Henderson's comment, MDE believes it is required under Maryland law to make judgments with respect to adverse effects on, and risks to, the environment and public health. MDE is routinely able to demonstrate the accuracy and objectivity of its conclusions in this regard in adjudicative proceedings. Constellation's comment has been addressed by revising the language as shown above.

Please note that the beneficial use of coal combustion byproducts will be the subject of a future regulatory action, and this definition may be revisited at that time.

61. PPRP - (2)(b): In order of preference: (1) strike this clause, or (2) change the wording to add a direct link with the language of COMAR **26.20** and **26.21**. PPRP considers mine reclamation a beneficial use when CCBs are properly stabilized to cure to environmentally benign material.

USWAG - (2)(b): To exclude mine placement from the definition of beneficial use is inconsistent with sound science and in fact is incompatible with promoting environmental

protection. We recommend that MDE modify the definition of "beneficial use." The implication of the current definition is that any use that results in a net adverse effect to public health or the environment does not qualify as a beneficial use. But unless MDE applies that standard uniformly to all products against which CCPs compete in the marketplace, a standard of no net adverse effects to public health or the environment may actually promote competing unregulated manufacturing processes that in fact may result in greater adverse environmental or public health effects than particular uses of CCPs. CCPs are widely used – in road and highway applications as road base, subbase and embankments under state DOT approval, in engineered structural fills, as flowable fills, and in mining applications for mitigation of acid mine drainage, for subsidence control and for reclamation of surface mines in restoring approximate original contours. There are examples of these latter CCP utilization activities in Western Maryland. CCP utilization conserves natural resources and saves energy; these energy savings can be translated into greenhouse gas ("GHG") emissions reductions. The proposed restriction on "beneficial use" of CCPs may complicate the calculation or crediting of GHG emission reductions credits should we become subject to a regulatory program involving the capping and trading of GHG emissions.

Alpha-Omega Environmental Management - (2)(b): Remove this exclusion. There is certainly a "beneficial use" for CCB in mining operations. As long as CCB is managed in accordance with the requirements of the applicable regulations, it "*does not contribute to adverse effects to public health or the environment*" as indicated in COMAR 26.04.10B(2)(a).

Rich & Henderson - (2)(b): The regulations need to clarify that use of CCBs for reclamation of mines, is a beneficial use.

Mirant - (2)(b): We recommend that subsection (b) be deleted.

Constellation - The beneficial use definitions under 26.04.10.02(a)(2) do not address the use of coal ash as a structural fill material for applications such as road base, parking lots, building pads, etc. It is unclear whether MDE intends to develop regulations governing use as a structural fill under future beneficial use regulations or whether they should be addressed in this regulatory proposal. Constellation Energy suggests that MDE consider utilizing the regulatory language developed by the Pennsylvania Department of the Environment (PADEP) governing the use of coal ash as structural fill located in 25 Pa. Code §287.661.

MDE Response: MDE notes that the proposed regulations establish a third possible fate, "mine reclamation," in addition to "disposal" and "beneficial use". As the regulation as proposed would still allow the practice with appropriate controls, MDE believes that being required to call the practice either disposal or beneficial use is of no purpose. Moreover, MDE's announced intent to address beneficial uses in specific regulations at a later date, with possible further amendment to this definition, renders a change to the proposed regulation premature at this point. Therefore, no change to the proposed regulations is needed in response to this comment.

62. Environment Maryland - (2)(a) and (b): "Beneficial use" should not encompass uses for landfill, structural/building fill, soil improvement, agriculture, soil conditioning or land reclamation.

MDE Response: The proposed regulations do not address beneficial uses beyond the definition, and the determination of what specific activities will be allowed as beneficial uses will be the subject of a future regulatory action. MDE notes, however, that the Pozzolan Act (§15-407 of the Environment Article, Annotated Code of Maryland) allows the uses referenced in the comment, and regulations cannot prohibit activities that are authorized by statute. Therefore, no change to the proposed regulations is needed to address this comment.

63. Matt Scanlon - "Limit overly broad definition of Beneficial Use."

MDE Response: As the proposed regulations do not address beneficial uses beyond the definition, and the determination of what specific activities will be allowed as beneficial uses will be the subject of a future regulatory action, no change to the proposed regulations is needed to address this comment.

64. PPRP - Coal Mines: Add or clarify a definition of coal "mines" to include active and abandoned surface and deep mines.

MDE Response: The Department does not believe that a separate definition of "coal mines" is necessary. The Department interprets the term "abandoned coal mine" in the regulations to include both abandoned surface mines and abandoned deep mines. A future rulemaking will clarify that CCBs may be utilized in an active deep mine in accordance with the regulations. Where the Department has already authorized CCBs to be utilized in connection with an existing deep mine operation by permit or otherwise, this utilization may continue in accordance with the authorization.

B(3) "Coal Combustion Byproducts"

65. PPRP - By its physical and chemical properties coal fly ash is a pozzolan; therefore, there appears to be no need to specifically call out pozzolan in the definition of CCBs. The definition of pozzolan should be merged with the CCB definition. All definitions should be consolidated into one section to provide for consistency and to eliminate redundancy in the proposed regulations. The document on multiple occasions reads *"flyash, bottom ash, boiler slag, pozzolan, and other solid residuals removed from air pollution control devices"*. To PPRP's knowledge, fly ash is the only pozzolan removed by air pollution control devices after coal combustion. If any other pozzolans are anticipated from coal combustion, language should include *"…fly ash and other pozzolans…"*.

MDE Response: MDE believes that not all coal fly ash is necessarily a pozzolan, and not all pozzolans are fly ash, so separate terms are warranted. Moreover, the term

"pozzolan" is used and defined in §15-407 of the Environment Article, Annotated Code of Maryland (the "Pozzolan Act"). The reason for using the term "pozzolan" explicitly in the regulations is to make clear that the regulations address the management of "pozzolan" as that term is used and defined in the Pozzolan Act.

With respect to the comment regarding consolidation of definitions, MDE notes that the three sets of definitions in the proposed regulations are in three separate subtitles of COMAR Title 26, and separate definitional sections are necessary for each subtitle. Therefore, no change to the proposed regulations is needed to address these comments.

66. New Page - The definition of CCBs could be expanded to include other combustible materials (wood, petcoke and tire derived fuels) to allow them to be exempt from solid waste if used in accordance with the regulations.

Mirant - "Coal may occasionally be mixed with small amounts of other materials such as biomass, and the resulting ash should still be considered CCB. We suggest inserting the term *"primarily"* after *"resulting.""*

Constellation - Add the word *"primarily"* after *"resulting"* so it reads*: "....resulting primarily from the burning of coal."* This change helps match the scope of this regulation to COMAR 26.13.02.04-1(4), which excludes from hazardous waste regulation "fly ash waste, bottom ash waste, slag waste, and flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels." This language is important because coal may at times be mixed with small percentages of biomass or other permitted materials, and the resulting ash should still remain coal combustion byproducts.

MDE Response: Commentors suggest allowing ash from fuels in addition to coal to be included in the definition of CCBs, such as wood, petroleum coke, and tire derived fuels. MDE has considered this suggestion, and is concerned with the concept of how to discriminate between a coal burning boiler or power plant that uses an alternative fuel such as tire chips and an incinerator for solid waste. The concern is that municipal incinerator ash generally contains higher levels of some pollutants than CCBs, and some alternative fuels could have the same effect. However, MDE considers that 1) the existing solid waste regulations give a reasonable description of a solid waste facility that must be regulated as such; 2) the proposed regulations do require characterization of the waste stream, which would pick up any material risk associated with the material's use; and 3) the proposed regulations are intended to govern coal combustion byproducts and can stand alone in that regard. So, if a facility is co-combusting coal with alternative fuels, MDE can examine the circumstances: if the resulting ash is being utilized, then it may meet the definition of a recyclable in Environment Article §9-1701 and would not be considered a waste, and whether the ash is appropriate for the proposed use will be analyzed; and if it is being disposed of in a permitted disposal facility that is authorized to accept industrial waste of the type generated, it should not matter if it is purely coal ash or not. Therefore, MDE does not believe a change to the regulation is required to address this issue.

67. Constellation - We recommend that this Subtitle .04 definition of coal combustion by-products should remain consistent throughout the subtitle .04 regulations to avoid confusion. As discussed below in these comments, if subsets of coal combustion byproducts should be regulated in specific ways, or subject to specific prohibitions, that objective can be achieved in the text of the regulations without changing the applicable definition.

MDE Response: The definition of coal combustion byproducts is consistent throughout the Subtitle .04 regulations. MDE surmises that the comment was intending to say that the definition of coal combustion byproducts should remain consistent throughout the Title 26 regulations. The definition of coal combustion byproducts in COMAR 26.21.04 is intended for noncoal surface mining and does not include or allow for the use of flue gas desulfurization sludge. It is different from that definition found in COMAR 26.20.24.08, the coal mining regulations, which does allow for the use of flue gas desulfurization sludge. MDE considered it better to make this distinction in the definition section as well as in the regulation dealing with specific prohibitions. MDE may consider the use of flue gas desulfurization sludge in noncoal surface mine reclamation in a future rulemaking.

B(4) and B(9) "Coal combustion byproducts facility" and "Facility"

68. PPRP - Definition seems to be too broad and may include any facility (e.g., cement manufacturers, lime kilns, etc.) that may use fly ash as an ingredient in a finished product. This may lead to an unintended regulation of facilities currently beneficially using fly ash as a substitute for a raw material in a manufactured product (e.g., concrete products and cement).

Rich & Henderson - The definitions of *"facility"*, and *"coal combustion byproducts facility"* are overlapping, overbroad, internally contradicting, and unnecessary. Change the definition for 'coal combustion byproducts facility' as follows and delete the definition of "Facility":

B. (4) "Coal combustion byproducts facility" means:

(a) a facility or site where coal combustion byproducts are generated, stored, handled, processed, recycled, disposed of or used; and

(b) "Coal combustion byproducts facility" does not include locations at which coal combustion byproducts are used exclusively for beneficial use.

Mirant - We suggest that the proposed definition of "Facility" be incorporated into the proposed definition of "Coal combustion byproducts facility" to avoid confusion between the two. We propose that subsection (9) be deleted and that the following language be inserted in section (4):

(4) "Coal combustion byproducts facility" means a facility or site where coal combustion byproducts are generated, stored, handled, processed, recycled, disposed of, or used, and includes the entirety of any lot or parcel and all contiguous land and structures, other appurtenances, and improvements on the land which are owned, leased, or used by, or under the control of, the owner or

operator of the facility.

Constellation - (1) A stand-alone definition of "facility" is not truly necessary and creates confusion. The term "facility" is used in multiple ways in the proposed regulations. It refers to an air pollution control "facility" in one place, and a "solid waste acceptance" facility in another. The term "facility" is also referenced in the definition of "sludge." Therefore, we suggest omitting the stand-alone definition of facility (proposed 26.04.10.02(9)), and instead adding the clarification as to the scope of facility as suggested in the above-recommended change in the definition of a "coal combustion byproducts facility."

(2) Add the following new language: *Coal combustion byproducts facility" does not include locations at which coal combustion byproducts are used exclusively for beneficial use."*
The term does not seem to be used in connection with beneficial use. It would not accomplish a legitimate regulatory purpose to view every location of coal combustion byproducts reuse a "coal combustion byproducts facility." For instance, a location where coal combustion byproducts are utilized in cement or other manufactured products should not be a coal combustion byproducts facility, and neither should the ultimate location at which the cement is used. Similarly, a road bed or building foundation with (non-reclamation) structural coal combustion byproducts should not fall within this facility definition. We suggest that the definition of "coal combustion byproducts facility" be narrowed to exclude beneficial uses, or, perhaps more appropriately, all allowable reuse.

Constellation and Rich & Henderson - B(9) "Facility": Suggest omitting this definition entirely and addressing it in the definition of "coal combustion byproducts facility."

MDE Response: MDE has considered the various comments related to the definitions of "coal combustion byproducts facility" and "facility". MDE notes that the term "coal combustion byproducts facility" was used in the proposed regulations principally in the context of disposal. To address these comments and to clarify the final regulations, MDE will replace the term "coal combustion byproducts facility" with the term "coal combustion byproducts disposal facility" and change its definition. The definition of facility" will be incorporated into the definition of "coal combustion byproducts disposal facility" and a stand-alone definition of facility will be deleted from the proposed regulations.

B(6) and (7) "Disposal" and "Dispose"

69. Rich & Henderson and Constellation - We are concerned that *"as determined by the Department"* provides too much uncertainty while further regulation may be developed, and that this set of proposed regulations must be able to stand alone without creating unacceptable uncertainty. This can be accomplished by defining the term "Use" to encompass all intended allowable Uses, including the subset of "beneficial uses." Then the regulations governing specific "uses" may be phased in and these are developed. The

Department's development of the new regulations will accomplish the goal of the "as determined by the Department's clause" in the current proposal. The term "land disposal site" is not defined, so we suggest clearly incorporating the term disposal, which is a stand-alone defined term.

Suggested language: *"Disposal" means the discarding or abandonment of coal combustion byproducts in a manner that is not a "use" as this term is defined herein. Disposal does not include recycling, placement of coal combustion byproducts in a mine or for purposes of structural fill or soil conditioning or other uses or beneficial uses*.

Mirant - The language *"as determined by the Department"* is subject to arbitrary interpretation and does not provide sufficient guidance to regulated entities regarding what conduct is permitted. We suggest deleting the terms "as determined by the Department," and adding a second sentence to clarify uses that are permissible, as follows:
(7) Disposal.
(a) "Disposal" means the discarding or abandonment of coal combustion byproducts so that they are not recycled or used. (b) "Disposal" does not include placement of coal combustion byproducts in a mine, use as structural fill materials, or other beneficial uses.

MDE Response: The proposed changes would alter MDE's proposed definition to exclude anything that is remotely a use. The change proposed by Rich & Henderson seems overbroad to MDE, particularly as placement in a mine without authorization or in an improper manner is disposal, not use. Also, as previously discussed, the regulations as proposed establish a third possible fate – "mine reclamation" – in addition to "disposal" and "beneficial use", which renders moot the need to include mine placement as either disposal or beneficial use. Moreover, MDE has announced its intent to address beneficial uses in future regulations. Therefore, no change to the proposed regulations is needed to address this comment.

Commentors also object to the phrase "as determined by the Department". MDE considers the Department to be charged by Maryland law with making judgments with respect to environmental matters, and routinely makes determinations as to whether a specific act comports with the law and regulations or is a violation. Entities that may take issue with one of MDE's determinations have the right to challenge such determination under the law. Therefore, MDE believes the phrase "as determined by the Department" is appropriate.

B(12) "Open Dump"

70. Rich & Henderson - These definitions raise uncertainty about properties where CCBs have been placed for reclamation, grading, stabilized fill, etc., prior to the effective date of the regulations. In addition, it fails to clarify that a mine reclaimed with CCBs after the effective date in accordance with COMAR 26.20.24 or 26.21.04 will not be an "open dump."

Proposed Solution: *"Open dump" means a land disposal site which receives discarded or abandoned coal combustion byproducts for disposal after the effective date of these regulations and:*

(a) Is not designed or operated in accordance with the requirements for a sanitary landfill under COMAR 26.04.07; or
(b) Is in violation of the Resource Conservation and Recovery Act, Section 4005, and 40 CFR §257.

Constellation - Proposes same language as Rich & Henderson above. Comment: "The term "land disposal site" is not defined, so we suggest clearly incorporating the term disposal, which is a stand-alone defined term. Also, the regulations should be clarified to ensure that they are not applied retroactively. This is one location where this can be accomplished."

Mirant - B(12): The definition of "Open Dump" should be revised to exclude ash disposal sites that are operating legally at the time the rules are promulgated. The existing language should be placed into a new subsection (a) and the existing subsections (a) and (b) should be renumbered to (1) and (2). A new subsection (b) should be added as follows: *"(b) 'Open dump' does not include a coal combustion byproducts facility that was in operation as of April 1, 2008 and operating in accordance with COMAR 26.04.10.04(E)"*

MDE Response: With respect to the issue raised by Rich and Henderson, mine sites would not come within the definition of open dump unless a "disposal" took place, so no change is necessary to specifically address mine sites or other sites where CCBs are used or recycled.

With respect to the issue raised by Constellation, MDE believes the term land disposal site is sufficiently clear on its face because the term "disposal" is defined in the regulations. There is no need to incorporate the words in the definition of "disposal" in this definition. Also, the regulations will be applicable after their effective date.

The issue raised by Mirant regarding excluding previously authorized existing disposal sites will be resolved by adding language to Regulation .03B(1). See the regulation change found in Comment 79.

B(19) "Solid Waste"

71. **Rich & Henderson and Constellation**
The text *"as determined by the Department"* provides too much uncertainty while further regulation may be developed. This set of proposed regulations must be able to stand alone without creating unacceptable uncertainty. This can be accomplished by defining the term "Use" to encompass all intended allowable Uses, including the subset of "beneficial uses." Then the regulations governing specific "uses" may be phased in and these are developed. The Department's development of the new regulations will

accomplish the goal of the "as determined by the Department' clause in the current proposal.

Proposed Language: *"Solid waste" means any garbage, refuse, sludge, or liquid from industrial, commercial, mining, or agricultural operations or from community activities, including coal combustion byproducts that are not managed in a manner that is a "use" as that term is defined in this regulation.*

MDE Response: Rich & Henderson and Constellation object to the phrase "as determined by the Department". MDE considers the Department to be charged by Maryland law with making judgments with respect to environmental matters, and routinely makes determinations as to whether a specific act comports with the law and regulations or is a violation. MDE is routinely able to demonstrate the accuracy and objectivity of its conclusions in this regard in district, circuit, and administrative courts. Entities that may take issue with one of MDE's determinations have the right to challenge such determination under the law. MDE believes the phrase "as determined by the Department" is appropriate. Therefore, MDE declines to make this change to the proposed regulations.

72. **Rich & Henderson and Constellation** - New proposed definition "Use":
We are proposing a definition of "use" that encompasses all anticipated coal combustion byproducts management activities except disposal. This definition serves important functions. It ties together Chapter 10 with the Chapter 7 permit exclusion. It also fills in a key missing element in the structure of Chapter 10, which revolves around "use" of the coal combustion byproducts. It removes some of the uncertainty created by these regulations and the silence concerning activities such as structural fill, by at minimum declaring these to be a use and allowing for their further definition as a beneficial use.

Proposed Language: *"Use" means the utilization of coal combustion byproducts in a manner that is not discarding or abandoning the material. Use includes recycling, raw product substitution, manufacturing, reclamation of coal and non-coal mines, structural fill, soil conditioning and any other use authorized by Md. Env't Article, § 15-407(b)(2) and this chapter.*

MDE Response: Commentors propose a definition of "use" that is very broad. A definition of "use" may be considered as part of a future rulemaking relating to beneficial uses. Therefore, no change to the proposed regulations is needed to address this comment at this time.

.03 General Restrictions and Specifically Prohibited Acts

73. Mirant - .03A: The phrase *"is likely to"* provides too much uncertainty for a regulated entity to determine what conduct is prohibited in that it purports to prohibit merely the potential to cause the identified conditions. Accordingly, we suggest that *"is likely to"* be deleted from the end of Section A, immediately before the numbered subsections.

MDE Response: Mirant proposes the deletion of the phrase "is likely to" where reference is made to the general prohibitions against causing certain nuisances or types of pollution. MDE notes that this section is closely based on similar language that has existed in the solid waste regulations at COMAR 26.04.07.03 since at least 1988. The intent of this section is to protect the public health, safety, and welfare from the misuse of CCBs. MDE also notes that this would enable MDE to require corrective action before a release of pollutants to the environment occurs, which should be the goal of all parties, including the regulated community. Therefore, MDE declines to delete this language.

74. Mirant - .03A(1): The term *"nuisance"* is highly subjective and subject to arbitrary interpretation. We suggest that the term *"nuisance"* be defined to include only demonstrable pollution and to specifically exclude minor aesthetic, noise or traffic related matters.

MDE Response: Maryland has had odor and nuisance regulations in effect in the context of air emission sources since at least 1980. COMAR 26.11.06.08 states: "An installation or premises may not be operated or maintained in such a manner that a nuisance or air pollution is created. Nothing in this regulation relating to the control of emissions may in any manner be construed as authorizing or permitting the creation of, or maintenance of, nuisance or air pollution." Moreover, MDE is charged with protecting the public from health nuisances (see Title 10, in particular §10-102, of the Environment Article, Annotated Code of Maryland and COMAR 26.04.07.03). This statute has existed in similar form and intent since the Acts of 1914 (No. 804, Section 5, of the Public Laws of Maryland), and has been enforced without a specific definition for 94 years. Clearly, the legislative intent of this statute is to refer to nuisances that have the potential to affect the public health, but with today's knowledge, that could include dust, odor, or water pollution, as these things can have adverse impacts on the public health. In light of the legislative history and MDE's long experience in successfully determining what constitutes a nuisance and enforcing nuisance laws and regulations, MDE deems it inappropriate to limit its regulatory enforcement authority and declines to make any change to the proposed regulations to address this comment.

75. Mirant - .03A(2): It is simply not possible to generate CCBs without creating some air pollution, as is recognized by the voluminous regulations governing air pollution from electric generating units that burn coal. Similarly, the handling and processing of CCBs also creates some air pollution. Accordingly, we suggest adding the word *"unpermitted"* between *"create"* and *"air pollution."*

MDE Response: MDE does not agree with the suggested change because enforcement of air pollution provisions under the statute is not limited solely to installations or activities that have a permit or approval from the Department. Thus, inserting the term "unpermitted" into the proposed regulation could only serve to impede the Department's ability to enforce the laws against any source that may be in violation of the law.

Moreover, the term "air pollution" is defined in §2-101 of the Environment Article, Annotated Code of Maryland as follows:

"Air pollution" means the presence in the outdoor atmosphere of any substance that is present in such quantities and is of such duration that it:

(1) May be predicted with reasonable certainty to be injurious to property or to human, plant, or animal life; or
(2) Unreasonably interferes with the proper enjoyment of the property of others because of the emission of odors, solids, vapors, liquids, or gases."

To be in violation of Regulation .03A(2), a person would need to create "air pollution" as it is defined above, not merely cause emissions from a generation facility. No change is needed to the proposed regulations.

76. Environment Maryland - .03A(2): Identify more precise parameters for the prevention of air pollution by rewording this provision to read, *"Interfere with the attainment or maintenance of ambient air quality standards at any offsite location based on the maximum potential emissions;"*

MDE Response: "Air pollution" as defined in statute is actually broader than the definition proposed by Environment Maryland, which gives the Department more discretion and authority. Moreover, regulations may not conflict with statutory definitions. Therefore, MDE declines to make the proposed change.

77. Mirant - .03A(4): As written, a single transient exceedance of a groundwater standard would constitute a violation. We recommend redefining a violation as an exceedance of a groundwater quality standard over two or more consecutive monitoring periods.

MDE Response: Mirant recommends defining a groundwater violation as an exceedance of a groundwater standard that occurs over two or more consecutive monitoring period. MDE notes that it relies on science to determine when water pollution has occurred, and while that often means that replicate samples and statistical methods are used to provide the necessary confirmation, there are times when one sample is ample evidence that water pollution has occurred. MDE is routinely able to demonstrate the accuracy and objectivity of its conclusions in this regard in district, circuit, and administrative courts. Entities that may take issue with one of MDE's determinations have the right to challenge such determination under the law. Therefore, no change is needed to the proposed regulations in response to this comment.

78. Mirant - .03A(6): This language provides too much uncertainty for a regulated entity to determine what conduct is prohibited, and is subject to arbitrary interpretation by the Department. We do not know what is meant by a potential to create a hazard to *"welfare"* or *"comfort."* We suggest deleting the words *"welfare"* and *"comfort."*

MDE Response: Mirant objects to the general prohibition against activities that create other hazards to the public health, safety, welfare, or comfort, as it believes that this standard is too arbitrary for them to be able to predict or prevent what conduct is

included, and likely to cause the Department to take arbitrary and capricious action. MDE points out that similar language has been in active use in the solid waste regulations for over 20 years, which has proved itself useful in protecting the public health without causing complaints of arbitrariness by MDE. If MDE takes an action based on this regulation, then the responsible party against whom MDE acted would have the right to appeal MDE's action. Therefore, no change to the proposed regulations is needed to address this comment.

79. Mirant - .03B(1): In order to clarify that existing ash sites are not prohibited, the qualifying language *"Except as provided in 26.04.10.04(E),"* should be added before *"A person may not…."*

MDE Response: MDE considers this suggestion to be a useful clarification of the intent of the proposed regulation in that existing disposal sites that have been previously authorized will not be deemed "open dumps" as defined in the regulation, and this change will be made to the proposed regulations.

80. Constellation - .03B(1)(b): Suggested language: *(b) Cause, suffer, allow, or permit disposal of coal combustion byproducts on his or her property in an open dump.*

Comment: The term "open dumping" is not well enough defined for use in this context. Assuming that the term disposal will be better defined to exclude allowable uses, then the term "disposal" can be used here in tandem with "open dump." This is important because open dumping should only occur in context of "disposal." The danger is that, without adequately defining key terms, actions such as soil conditioning could be interpreted as falling within the prohibition. There is no indication that the Department would intend this result.

MDE Response: MDE notes that although the proposed language would have the same effect as the existing language, the wording as proposed in the regulation is broader than the revised wording proposed by Constellation. While open dumping is inherently unauthorized disposal, it may occur at a site which is otherwise not a disposal site, e.g., a mine reclamation site, but dumped outside of the mine reclamation area, etc. Consequently, to avoid being limited in its enforcement options, MDE declines to change the language of the proposed regulation.

81. Constellation - .03B(2): Suggest deleting this section. Comment: "This proposed provision seems to simply state that hazardous waste must be managed as a hazardous waste. This concept is not necessary in this Chapter or even Subtitle, as this concept is covered thoroughly in 26.13 and its repetition in 26.04.10 does not add any substantive environmental protections. Moreover, the mere presence of this proposed provision within 26.04.10 has the potential to create enormous confusion concerning what material this provision is intended to cover and its significance. For these reasons, we recommend deletion of 26.04.10.03B(2). It is self-evident that only facilities permitted under 26.13 may accept for storage or disposal a hazardous waste."

MDE Response: Constellation comments that the prohibition of disposal of hazardous wastes in a CCBs facility is duplicative of similar prohibitions in the hazardous waste regulations, and should be removed. MDE intends in this section to make clear that CCBs that are a hazardous waste under the MDE hazardous waste laws may not be disposed of in a CCBs facility unless that facility is in compliance with the hazardous waste regulations. Providing such a reference here is helpful to those who may not be entirely familiar with Maryland's regulatory scheme. Therefore, MDE believes it to be helpful and provides a reference to the hazardous waste regulations that would be applicable. Therefore, MDE declines to change the proposed regulations as requested.

82. Environment Maryland - .03B(3): The second sentence of this provision should be replaced with the following: "The Department shall require that the permit application include a description of the frequency and type of practices that will be employed to comply with air quality regulations, in particular COMAR 26.11.06.03.C. and D., and to prevent a condition of air pollution during operation and closure of the site. For sites bordering or within 2,000 feet of residential properties, the Department shall also require that the permit application include a plan to monitor particulate concentrations in ambient air at multiple locations along the site perimeter."

MDE Response: See MDE's responses to Comment 38 concerning air monitoring and Comment 90 concerning air pollution controls. MDE declines to make the requested change.

.04 Disposal

83. **Mirant -** .04B: In order to clarify that existing ash sites are not prohibited, the qualifying language *"Except as provided Section E of this regulation,"* should be added before *"A person shall dispose of …."*

MDE Response: This proposed change to .04B is not necessary because section E is not an exception to the requirement of section B that a person dispose of coal combustion byproducts only in a facility authorized by the Department for such disposal. Rather, section E creates one type of authorized facility, i.e., an existing site that the Department has authorized prior to a certain date. Section E on its own authorizes these existing sites, whereas section B provides that coal combustion byproducts can only be disposed of in facilities where such disposal is authorized. Therefore, MDE declines to adopt any change to the proposed regulations to address this comment.

84. Mirant - .04B: This language suggests that a special Department approval is needed before a permitted landfill may accept CCBs, when we do not believe that is the Department's intent. We suggest that the section be revised as follows:

B. A person shall dispose of coal combustion byproducts only in a coal combustion byproducts facility that has been authorized by the Department for the disposal of coal combustion byproducts or in a solid waste acceptance facility that may legally receive coal combustion byproducts.

Constellation - .04B: As drafted, the proposed regulation creates the impression that a special Department approval process is needed before a permitted sanitary landfill may accept coal combustion byproducts, and even could be construed to extend out of State (though we do not believe that this would be MDE's intention). We are not aware of the environmental concerns that would lead to such a conclusion, as the solid waste landfill regulations should adequately address any coal combustion byproduct risks.

Suggested language: *A person shall dispose of coal combustion byproducts only in a coal combustion byproducts facility that has been authorized by the Department for the disposal of coal combustion byproducts, or in a solid waste acceptance facility that is permitted and may legally receive coal combustion byproducts.*

MDE Response: MDE notes that disposal of CCBs does require approval in the form of a refuse disposal permit, e.g., an industrial or municipal waste landfill permit, or disposal through a permitted transfer station; and further notes that some classes of sanitary landfills such as rubble landfills and land clearing debris landfills (and some transfer stations) are not permitted to accept CCBs.

However, MDE notes that the refuse disposal permits for municipal waste landfills already allow them to accept ashes and non-hazardous industrial wastes, so no new approval would be required for these sites; and if one of the other types of landfills or other waste disposal facilities such as a transfer station sought to amend their permit to allow them to accept CCBs, and MDE concurred with the change, then the permit amendment would constitute special approval. Therefore, no change will be made to the proposed regulations in response to these comments.

85. Mirant - .04C: This language is unclear regarding the identity of the permit holder. We suggest that the language be revised to clarify that the operator of the facility should be the permit holder*: "A person who desires to operate any new coal combustion byproducts facility constructed after April 1, 2008 in which coal combustion byproducts will be disposed shall apply for a permit for an industrial waste landfill . . ."*

Constellation - .04C: The language of this proposed regulation would create confusion as to the identity of the permit holder. The operator of the facility would obtain the permit. A generator of the coal combustion product may not be the operator of such disposal facility.

Suggested language: *"A person who desires to operate any new coal combustion byproducts facility constructed after April 1, 2008 that will serve as a location for the disposal of coal combustion byproducts shall apply for a permit for an industrial waste landfill . . . ."*

MDE Response: MDE disagrees that the entity that will apply for a permit will necessarily be the operator of the facility. For example, a County government could obtain a permit for a facility, but then hire a contractor to operate the facility. The purpose of the regulation is to ensure that a person apply for a permit before a new CCB

disposal facility is constructed. That person may be a generator, an operator, the owner of a site, a local government, etc. MDE agrees that the language can be clarified and will revise the regulation to provide that a "person" shall apply for a permit. The term "person" is defined broadly in the proposed regulations.

86. PPRP - COMAR 26.04.10.04C: should be rewritten to reflect the solidification/stabilization provisions above. Each succeeding section would remain the same.

MDE Response: Disposal of CCBs in a lined municipal or industrial landfill, from which leachate is collected and treated instead of discharged to the environment, will be adequately protective of human health and the environment so prior stabilization/solidification of the material is not required. No change to the proposed regulations will be made in response to this comment.

87. Alpha-Omega Environmental Management - .04C & D: define what constitutes "*constructed"* as it relates to a CCB facility.

MDE Response: The term "constructed" is used here in the same sense as in Environment Article §9-204, which requires that a landfill or other solid waste acceptance facility not be "constructed or operated" unless a refuse disposal permit has been issued for the site where the activity will take place. MDE has historically interpreted this to mean that the operator may not actively construct any elements of the facility that are considered to be part of the design of the facility.

However, this has not been interpreted by MDE to restrict other activities on the property that, while perhaps conducive to the proposed future use as a landfill, are nonetheless allowable land uses in their own right. For example, a property can be logged, cleared, and even excavated for sand and gravel or fill dirt provided the proper permits are obtained, and sediment controls installed for those purposes; monitoring wells can be drilled for the purpose of investigating the property; access roads, a scale house, and equipment maintenance structures could be built to support mining activities; and similar activities could be pursued at the owner/operator's risk. However, installation of structures that are obviously only supportive of landfill activities (or in this case, CCB disposal activities) such as a liner, leachate collection system, etc., would not be allowed until MDE has approved the plans for the activity. No change to the proposed regulations is needed in response to this comment.

88. **Constellation** - .04D: Suggested language: *"A new coal combustion byproducts facility that will accept coal combustion byproducts for disposal may not be constructed or receive coal combustion byproducts after April 1, 2008 unless a permit for an industrial waste landfill has been issued by the Department authorizing the facility*." Comment: "The concern here is the potential breadth of the term *"operated."* Existing facilities need to be maintained, and this may involve a variety of site activities that one could construe as "operation." These will have to continue to occur after April 1, 2008, and presumably will not require a permit. The suggested edit provides a more focused

restriction, by confining the prohibition to the activity of concern: the receipt of coal combustion byproducts.

MDE Response: Regulation .04D only addresses new CCB facilities, not existing facilities. A permit will need to be obtained before construction or operation of new CCB facilities. Therefore, no change to the proposed regulations will be made in response to this comment.

89. Mirant - .04E: The restrictive clause "that the Department has authorized for the disposal of coal combustion byproducts prior to April 1, 2008" should be replaced with "that was in operation as of April 1, 2008 and not in violation of any material Department regulation…" In addition, the terms "it considers" is subject to arbitrary interpretation and should be deleted.

MDE Response: MDE disagrees with this comment. MDE intends by this regulation to allow existing sites that it has authorized for the disposal of coal combustion byproducts prior to a certain date to continue to operate under that authorization, subject to further controls or requirements, not, as suggested, to allow all existing sites that are not in violation to continue in operation. Therefore, no change to the proposed regulations will be adopted in response to this comment. With respect to the term "it considers", MDE is charged by Maryland law with the duty of preventing, abating and controlling pollution in the State and establishing effective programs and methods to do so. To that end, MDE is required to make judgments with respect to whether specific methods are effective in preventing, abating and controlling pollution and if not, to impose other requirements. MDE routinely makes determinations as to whether it considers a specific control or requirement to be an effective method of preventing, abating and controlling pollution. Entities that may take issue with one of MDE's determinations have the right to challenge such determination under the law. Therefore, MDE believes the phrase "it considers" to be appropriate, and no change to the proposed regulations will be made in response to this comment.

90. Environment Maryland - .04E: The owners/operators of coal combustion byproducts disposal sites, authorized prior to April 1, 2008, should be required to evaluate existing site conditions in light of proposed COMAR 26.04.10 and off-site surface water, groundwater and ambient air impacts due to the fly ash disposal operations. The following text should be added to this provision:

"The Department shall also require submission of a plan that describes the frequency and type of practices that will be employed to comply with air quality regulations, in particular COMAR 26.11.06.03.C. and D., and to prevent a condition of air pollution during operation and closure of the site. For sites bordering or within 2,000 feet of residential properties, the Department shall also require that the plan detail a methodology that will be implemented to monitor particulate concentrations in ambient air at multiple locations along the site perimeter."

MDE Response: It is MDE's position that operators of CCB disposal sites are cognizant of the inherent potential of their activity to create an air pollution episode or nuisance

condition. However, both COMAR 26.04.10.03 and 26.11.06.03C specifically prohibit the source from creating air pollution or a nuisance and require that the source take "reasonable precautions to prevent particulate matter from becoming airborne." Further, Section D of COMAR 26.11.06.03 provides various control measures available to the source to ensure that nuisance emissions are not created. However, the specified list of control measures is not intended to be all-inclusive, thus allowing the source to consider unforeseen and unconventional approaches that can resolve a potential nuisance condition. Therefore, it would be inappropriate for MDE to arbitrarily restrict the source to using a single control measure identified in a plan when other control measures could be equally effective in preventing a nuisance condition.

With respect to ambient monitoring, MDE retains the authority to impose source-specific ambient monitoring on a case-by case basis if it is felt that nuisance particulate may cause or contribute to a violation of the NAAQS. The rationale for not automatically requiring on-site monitoring is discussed at length in the response to Comment 38.

Finally, the current authorizations for existing CCB disposal sites already require groundwater and surface water monitoring to assess potential adverse impacts from disposal activities. Under the proposed regulation, MDE will continue to inspect these existing disposal sites and reevaluate the requirements of their current authorizations to determine the need for additional monitoring and reporting of water quality data and further control measures to prevent water pollution. Therefore, no change to the proposed regulations will be made in response to these comments.

91. Anne Arundel County - .04F: *"…The Department SHALL ~~may~~ impose additional controls or requirements on the expansion of the facility…"*

Four Seasons Community Association - .04F: "We strongly urge for the requirement of expanded facilities to meet the new regulations."

Matt Scanlon - "Require expansion and operation of existing facilities to meet new requirements."

MDE Response: The continued development or expansion of previously approved facilities within the existing authorized area will be subject to review and evaluation by MDE, which will have the authority to impose new requirements on the continued operation of those facilities (see COMAR 26.04.10.04 E and F). Due to specific site conditions, it may be impossible to bring an existing site into compliance with the new regulations, but other control strategies can be employed that can make the continuing operations effectively just as safe, such that the use of the word "shall" as suggested by the commentors may not be appropriate. However, site operators must notify MDE of their intent to expand, so MDE has an opportunity to advise them of the additional requirements that are applicable to their specific case. Therefore, no change to the proposed regulations is needed to address this comment.

92. Environment Maryland - .04F: The proposed provision should be replaced with the following: *"An existing coal combustion byproducts facility that intends or proposes to*

expand beyond its current authorization or operations shall obtain a refuse disposal permit issued by the Department for a new industrial waste landfill for such expansion, consistent with the requirements of COMAR 26.04.07. The Department shall also require submission of a plan as part of the permit application that describes the frequency and type of practices that will be employed to comply with air quality regulations, in particular COMAR 26.11.06.03. C. and D., and to prevent a condition of air pollution during operation and closure of the site. For sites adjacent or in close proximity to residential properties, the Department shall also require that the permit application include a plan to monitor particulate concentrations in ambient air at multiple locations along the site perimeter."

MDE Response: The proposed replacement language requiring that expansions of CCB facilities obtain industrial waste landfill permits conflicts with the intent of the regulation to allow various means of CCB management. The proposed language of this section requires an existing CCB disposal facility to advise the Department of their intent to expand the activity, so that the Department can make a judgment as to the type of controls or requirements it considers necessary, which could include the requirement for an industrial waste landfill permit.

With respect to requiring the permittee to submit a plan specifying their approach to prevent air pollution, see the response to Comment 90. Similarly, the circumstances under which MDE would require site-specific ambient air monitoring will be addressed on a case-by-case basis and is discussed at length in the response to Comment 38. Therefore, no change to the proposed regulations will be made in response to these comments.

93. Mirant - .04F: In the first sentence, the terms "*authorization or*" should be deleted.

MDE Response: The suggested deletion of "authorization or" would limit the ability of MDE to require additional controls or requirements when an existing facility wants to expand beyond its current authorization. MDE disagrees with this limitation and therefore, no change will be made to the proposed regulations to address this comment.

94. Environmental Integrity Project - CCW disposal in landfills should require liners, leachate recovery and treatment systems, extensive monitoring of ground and surface water, and bonds to cover long-term monitoring and remediation costs.

MDE Response: The existing solid waste statutes and regulations already require liners, leachate collection systems, groundwater monitoring and closure bonds. Postclosure monitoring is the responsibility of the landowner and/or any other responsible party that can be identified. The proposed regulations address liners, leachate collection systems and monitoring for noncoal mines, and the mining statute addresses bonding requirements. Therefore, no change to the proposed regulations is needed to address this comment.

95. Environmental Integrity Project - All forms of CCW disposal, including the use of CCW to reclaim abandoned or active coal mines, should require a permit. The regulations

should provide opportunity for notice and comment regarding draft permit conditions, and a public hearing if requested. MDE should be required to respond to any comments, and the public should be provided the opportunity to contest the permit through the administrative process.

MDE Response: Maryland law sets forth the requirements for permitting, public comment, and notification. These differ somewhat for the various regulatory processes. Regulations cannot create the requirement for a new permit process where it is not authorized by statute. However, the major existing regulatory programs have public involvement as required by law. For industrial waste landfill permits, there are significant public notification requirements, including mandatory requirements for a public informational meeting following the initial application, placement of relevant permit documents in a local repository such as a nearby public library, and a public hearing once MDE has made a tentative determination to issue or deny the permit. An opportunity for a contested case hearing is also afforded for individuals who are aggrieved by MDE's final determination, and who have standing.

Both coal and noncoal mines also require MDE permits, with possible reclamation using coal combustion byproducts managed as part of the mine reclamation plans for the site. Hearing opportunities are provided for noncoal surface mine applications in Environment Article §5-204. Notice is provided to all interested persons and in a legal notice in a local newspaper. Contested case provisions are also provided in the existing surface mine law. For active coal mine permit applications or significant amendments, COMAR 26.20.04.08D(2) provides that review and approval be in accordance with the permit review process, which provides for public notices. Abandoned mine use also provides for a public notice and opportunity for public hearing. See also the response to Comment 15 concerning public notice requirements.

.05 Storage

96. PPRP - An exemption or allowance for facilities such as cement kilns, concrete product manufacturing plants, redi-mix plants, etc. would be in order for the CCBs to be used in manufactured products.

MDE Response: The regulations proposed only address CCB disposal, storage, and use in mines. Although they do set standards for safe storage of CCBs, they do not restrict the use of the material in manufactured products such as concrete, cement, asphalt, or other products. The conditions required for storage are considered to be necessary to prevent water and air pollution. However, the regulations do contain some flexibility as to how these conditions can be met. Industrial users such as those mentioned are already managing similar materials and should be able to readily satisfy these conditions. This issue may also be addressed at a later date as part of the beneficial use regulations. Therefore, no change to the proposed regulations is needed to address this comment.

97. New Page - .05A: Since section .03 recognizes that water run-off from CCBs may be allowed if the activity is controlled by a permit, then regulation .05 Storage should also

allow for this exemption. .05.A could be adjusted to read "*A person may not store CCBs, except in accordance with this regulation. The provisions of this regulation pertaining to controlling contaminated runoff, leachate, spilling, or any of the provisions designed to stop interaction of discharges of CCBs from entering waters of the State shall not apply if the Department has issued a valid permit controlling the discharge of these waters from CCB handling areas.*"

MDE Response: MDE disagrees with this comment. Section .03B prohibits a discharge of pollutants to the waters of the State except in accordance with a valid discharge permit. However, holding a discharge permit will not necessarily preclude a permittee from having to comply with the storage requirements of Regulation .05. For instance, even if a permittee holds a valid permit for a controlled discharge, the permittee should still be required to take measures to ensure that coal combustion byproducts are stored in a proper storage system, that contact with waters of the State are minimized, and that spilling and overflowing do not occur. Therefore, no specific change to the proposed regulations will be made in response to this comment. However, in connection with Comment 101, MDE will be revising Regulation .05D(2) to specify that the duty in that section is to prevent *unlawful* discharges.

98. Mirant - .05B: An exemption to this provision should be made for those units that store CCBs for short periods during processing (e.g., quench ponds or sedimentation ponds) and to account for events that occur during unplanned maintenance events (e.g., cleaning an ash hopper) when storage of CCB on the ground for a short period may become necessary.

Rich & Henderson - .05B: The Proposed Rule acknowledges that temporary storage on the ground or not in an approved *"storage system"* may be allowed, but it requires the *"authorization of the Department"*. Obtaining such authorization will be a cumbersome process both for landowners and the Department.

Proposed Solution: An exemption for Coal Ash removed for such purpose that is stored less than thirty (30) days. Thirty days provides a short, but reasonable time to make arrangements for longer-term storage, use or disposal of the Coal Ash. The following revision to Section .05B would provide a solution:

> *"B. Except for the temporary storage for thirty (30) days or less, a person may not store coal combustion byproducts directly on the surface of the ground or in an unlined surface impoundment, pit, pond, or lagoon without the authorization of the Department.*"

MDE Response: MDE believes that environmental impacts could occur even with short-term, temporary storage of coal combustion byproducts. Moreover, monitoring the time periods when coal combustion byproducts are stored on a short-term, temporary basis would be problematic. Under the proposed language, sites that continually receive multiple coal combustion byproduct shipments could temporarily store each shipment for fewer than 30 days; each shipment taken alone could be a temporary storage of 30 days or less, but all of these shipments taken together may result in a site having a constant

unregulated storage of coal combustion byproducts on site, the environmental impacts of which could be significant.

MDE recognizes, however, that short-term storage may be necessary in certain circumstances. Therefore, in the proposed regulation, MDE is providing a potential means for the regulated community to store directly on the ground or in an unlined surface impoundment, pit, pond, or lagoon by obtaining the authorization of the Department. This will allow the Department to assess the potential environmental impacts of the proposed storage. This process should not be overly cumbersome because authorization for a true, short-term temporary storage of 30 days or less should only have to be obtained once. If multiple authorizations at a site were requested, it would likely mean that a long-term storage system should be in place as provided in the regulation. Therefore, no change to the proposed regulations is needed in response to this comment.

99. Mirant - .05B, C, and D: Regulated entities will require some time to design and build the appropriate structures necessary to comply with the final regulation. We suggest that regulated entities be given at least 270 days from the effective date of the final rules in order to: (i) design, (ii) obtain construction and other necessary permits; and (iii) build appropriate containment structures.

Constellation - .05D: Please consider including a grace period such as 3 years to allow CCB generators to budget, design, and construct an appropriate facility. The cost of a facility with these design features can be very significant and most utilities would not be able to be immediately in compliance with these requirements.

MDE Response: There are a wide variety of storage methods that could be employed in different contexts, depending on the nature, size and scope of the CCB operation. Thus, there is an inherent difficulty in determining and specifying an appropriate time period for design and construction of a storage facility that could be applied universally to all storage operations. In providing a grace period to construct a permanent structure, MDE would need to be careful not to exempt regulated entities from the requirement that CCBs be stored in a manner that prevents contact with waters of the State, nuisance conditions and releases to the environment. In other words, MDE would expect that during any grace period, as regulated entities are taking time to budget, design and construct a permanent storage system, temporary methods could and should be employed to store CCBs in a manner that prevents releases to the environment. The regulation, as currently drafted, provides flexibility in this regard. The regulation does not require that a building or silo be in place on the effective date of the regulations. Temporary liners and tarps may be an appropriate means to prevent releases while a more permanent structure is being built, or CCBs could be moved to an area far from areas where waters could be impacted. See Comment 101 for additional information. The change to subsection D(2) referenced in Comment 101 provides more flexibility with regard to storage systems while maintaining performance standards and adequate protections. Please note also Section .05B, which provides that certain types of storage methods can be employed with the authorization of the Department. If an additional period of time is required to comply with a regulation, entities can notify the Department with a compliance schedule and obtain Department authorization. For these reasons, MDE does not believe that

specifying a compliance time period in the regulation that would apply universally to all types of storage operations is appropriate. Therefore, no change to the proposed regulations is needed to address this comment.

100. Mirant - .05C: It may not be possible to prevent all contact with precipitation and we believe the primary concern should be preventing pollution of waters of the State. We suggest deleting the terms *"precipitation and"* before *"waters of this State."*
Constellation - .05C: Suggested language*: A person shall store coal combustion byproducts in a manner that prevents contact with waters of this State and that is designed either to minimize contact with precipitation or to collect leachate that may result from contact with precipitation.*

Comment: While we agree that contact with the waters of the State should and can be prevented, contact with precipitation should not be equated with an environmental problem. To the contrary, if there is a leachate collection system in place that will minimize the risk of any pollution to waters of the State, then the environmental concern with precipitation would be addressed. Furthermore, absolute prevention of contact with precipitation may be virtually impossible in some circumstances. Instead, a more reasonable standard for performance would be to require minimization of contact with precipitation.

MDE Response: In evaluating these comments, MDE considers the most important point to be that contaminated liquids not be released to surface or groundwater. As a performance standard, while MDE would prefer that no water be contaminated in the first place, the ability to prevent a release through collection is equally protective of the environment. Therefore, MDE accepts the language proposed by Constellation and will make the recommended change to Regulation .05C.

101. Mirant/Constellation - .05D: Because no materials are completely *"impervious,"* this standard would be impossible to achieve. We suggest changing the term *"impervious"* to *"low permeability."* We also suggest adding the term *"unpermitted"* before *"discharges"* for clarity.

MDE Response: MDE agrees that this comment has merit, but does not accept the language of the suggested changes. MDE believes that the characterization of the relative imperviousness of the required roof is not critical given the performance standards inherent in the second half of the sentence. Therefore, to address this comment, MDE will amend COMAR 26.04.10.05D(2) to delete the phrase "Constructed of impervious materials and…" so that the language will read *"(2) Provided with a roof or other protections to prevent nuisance, air pollution, and unlawful discharges of contaminated stormwater or leachate to waters of this State*."

102. Alpha-Omega Environmental Management - .05E: define what constitutes "*near or in an area likely to*" pollute waters of the State. This is an arbitrary phrase.

Constellation - .05E: *"In an area"* likely to pollute should be broad enough to encompass risks of pollution. We suggest omitting the words *"near or"* because it is

both vague and arbitrary. If a location is "near" an area likely to pollute, it does not necessarily follow that there is any risk of pollution. For example, a fully enclosed storage facility may be "near" an area likely to pollute but may be entirely protective of the environment.

MDE Response: The wording of the regulation, "in an area likely to pollute waters of the State", reflects the requirement expressed in Title 9, Subtitle 3 of the Environment Article, Annotated Code of Maryland, that directs MDE to prevent pollution, not just abate it (see §9-302(b)). MDE recognizes, however, that there is minimal risk in storing CCBs "near" an area likely to pollute. MDE believes the language "in an area likely to pollute" provides adequate protection. Therefore MDE agrees that removing the term "near or" is appropriate and will make this change to the proposed regulations.

103. Alpha-Omega Environmental Management - .05F and G: replace "*likely*" with *"imminent."* Likely is too arbitrary.

MDE Response: See the response in Comment 102 with respect to the term "likely to" as found in COMAR 26.04.10.05E.

104. Mirant - .05G: The term *"specific requirements"* is subject to arbitrary interpretation and is too uncertain to provide guidance to regulated entities or Department employees about what the Department may require. We suggest defining what the Department may require.

MDE Response: Given the enormous range of possible events and site-specific conditions, it would be almost impossible to determine what specific requirements MDE might impose under this section. Moreover, MDE must have a degree of flexibility in order to address each situation on a case-by-case basis. MDE needs the ability to use common-sense interpretations to address each specific case. Therefore, no change to the proposed regulations is needed in response to this comment.

105. Alpha-Omega Environmental Management - .05H: replace "*ensure"* with *"establish."* The term "*ensure*" can be construed to mean guarantee and the appropriate management of CCB cannot be guaranteed since human factors and acts of God are involved.

MDE Response: This proposed wording reflects the requirement expressed in Title 9, Subtitle 3 of the Environment Article, Annotated Code of Maryland, that directs MDE to prevent pollution, not just abate it (see §9-302(b)). Therefore, no change to the proposed regulations is needed in response to this comment.

106. Anne Arundel County - 05H(1): There should be language here regarding notification, remediation and sanctions should there be a release of coal combustion byproducts during storage operations due to spilling or overflowing.

MDE Response: MDE notes that administrative, civil, and criminal penalties for violation of permits and regulations are established in law and are typically not repeated

in the regulation. Regulations .05F and .05H already include provisions requiring remediation. Listing specific remediation actions is not feasible because these will need to be tailored on a case-by-case basis. The Department believes that notification provisions already exist under federal requirements and adding a provision to the regulation would be duplicative. Therefore, no changes are needed to the proposed regulations in response to this comment.

107. Mirant - .05H: Regulated entities cannot *"ensure"* that a spill will never occur. (Subsection 3 specifically mentions *"spills"* and, therefore, contemplates that they may occur despite reasonable precautions.) In addition, subsection (3) is confusing because it does not explain how operations can be performed in a manner that *"contain[s]"* and *"clean[s] up spills."* We suggest that the language be revised as follows:

H. The owner and operator of a storage system shall:

(1) Design and operate systems in a manner that reduces the likelihood that a release of coal combustion byproducts will occur during storage operations due to spilling or overflowing; and

(2) Provide adequate storage space to handle the volume of coal combustion byproducts generated and to be stored;

MDE Response: MDE notes that taking steps to ensure that spills do not occur will statistically ensure that some spills do not occur. While acknowledging that some spill will likely occur, MDE believes that leaving the wording as is will be more compelling for the regulated community than the suggested language. This proposed wording reflects the legislative requirement expressed in Environment Article, Title 9, Subtitle 3 that directs MDE to prevent pollution, not just abate it (see §9-302(b)). Therefore, no change to the proposed regulations is needed in response to this suggestion.

108. Constellation - .05I: Suggested new section: *"For storage of less than 30 days in a single location, a person is not required to comply with Paragraphs B - D of this regulation if protections minimize the potential for nuisance, air pollution and discharges of contaminated stormwater or leachate."*

Comment: This new text is suggested to address the temporary storage of material, for example on location of use. We understand that it is the Department's intention for the storage provisions to apply only to large quantities of coal combustion byproducts, though the amount has not been quantified. We suggest that this be clarified in these regulations. Furthermore, this newly suggested provision is consistent with viewing smaller storage areas outside of the scope of the current set of regulations, because large storage piles would have a life of more than 30 days. This clarification would ensure at least some limited flexibility pending development of regulations that would provide further definition of the circumstances that are considered "storage."

MDE Response: See the response to Comment 98 concerning temporary storage of CCBs.

.06 Mine Reclamation

109. PPRP - PPRP views mine reclamation as a high volume beneficial use when properly mixed to cure to an environmentally benign material. Please consider re-wording section A to say *"A person may not use coal combustion byproducts that have not been properly stabilized/solidified in accordance with the EPA's current definition in a mine reclamation activity …..…"* Some demonstrated benefits of utilizing stabilized/solidified coal combustion byproducts in mine reclamation include the reduction of acid mine discharge and prevention of future subsidence.

MDE Response: MDE does not agree with this comment. CCBs used in coal mine reclamation will need to be alkaline by definition and therefore will have to be stabilized to qualify for use. CCBs used in noncoal mine reclamation will be placed at sites requiring a liner and leachate collection system and will not require stabilization or solidification. Please see the response to Comment 57 concerning solidification/stabilization.

110. Constellation - The proposed regulations should not be retroactive for previously authorized mine reclamation activities. A coal or non-coal surface mine reclaimed with coal combustion byproducts should not be out of compliance simply because they do not have newly required authorizations and cannot meet newly imposed construction standards.

Suggested changes:
A. A person may not use coal combustion byproducts in a mine reclamation activity or other mining operation after April 1, 2008 except in accordance with this chapter and § B or C of this regulation.
B Active and Abandoned Coal Mines. Coal combustion byproducts may be used in a surface coal mining and reclamation operation and in an abandoned coal mine after April 1, 2008 only in accordance with the provisions of COMAR 26.20, including but not limited to COMAR 26.20.24.08.
C. Noncoal Surface Mines. Coal combustion byproducts may be used in the reclamation of a noncoal surface mine after April 1, 2008 only in accordance with COMAR 26.21.04.
D. Surface coal mine, abandoned coal mine, and non-coal surface mine reclamation activities permitted prior to April 1, 2008 may continue to operate under the Department's authorization, except that the Department reserves the right to modify an existing authorization to require additional controls or requirements as it considers necessary to protect public health and the environment or to prevent nuisance conditions.

MDE Response: MDE does not accept this comment. The regulations will become effective on the date specified in the notice of final action and will be implemented after that date. The regulations are intended to be prospective and will not be applied retroactively, except as may otherwise be applicable in Section 26.04.10.04. The same effective date will apply to mine sites. Therefore, no change is needed to the proposed regulations.

.07 Variances

111. Anne Arundel County - .07A: Public notification should be required for any application for variance of any provision of this chapter.

Anne Arundel County - .07D: Public notification should be made by the Department as to its determination regarding any application for variance of any provision of this chapter.

Environment Maryland - All variances should be subject to public notice and hearing requirements.

MDE Response: The commentors request that public notification be required for any variance applied for or granted. MDE is supportive of the need for citizen involvement, but MDE notes that for solid waste landfill sites, this might conflict with applicable State law with respect to the types of activities that are subject to public notice and hearing requirements. In accordance with Environment Article §9-204, a "material alteration" of a landfill (for example, a permanent change in the base or final elevation of the landfill) is considered to constitute a major modification of the permit, that generally requires at least new plans, a public informational meeting, and a public hearing on the change, if not a whole new permit (depending on what change is specifically proposed and its magnitude). These proceedings are subject to the requirements of the law in Subtitle 1-601 et.seq. of the Environment Article, including appeal hearings. Facilities other than landfills and incinerators are not subject to formal public comment. Also, minor modifications to a procedure or equipment at a landfill do not require public comment. These modifications are generally minor, and the test in the proposed regulation is that the variance can only be granted if it provides "equal or greater" protection than strict adherence to the regulation.

In the mining context, a variance would generally be considered in conjunction with a permit application or a modification to an existing permit. All original permits are subject to hearing provisions in which the specific variance would be discussed. In the case of an existing permit in which the operator sought a variance, a permit amendment or modification would be required. Any change to the pollution control or reclamation plan would be a significant amendment and would be subject to the public hearing provision. Therefore, no change is needed to the proposed regulations to accommodate this comment.

112. Mirant - .07B(1): Regulated entities cannot absolutely *"prevent"* a release or discharge of CCBs, even with reasonable precautions. The term *"prevent"* should be changed to *"reduce the likelihood of…."*

MDE Response: MDE notes that taking steps to prevent a spill or release will statistically ensure that some spills do not occur. While acknowledging that some spill will likely occur sometime, MDE believes that leaving the wording as is will be more compelling for the regulated community than the suggested language. This wording

reflects the requirement expressed in Subtitle 9 of the Environment Article that directs MDE to prevent pollution, not just abate it (see Section 9-302(b)). Therefore, no change is needed to the proposed regulations in response to this comment.

113. Mirant - .07D: This language is vague and subject to arbitrary interpretation by the Department. We suggest that the terms *"When practicable"* and *"as determined by the Department"* be deleted.

MDE Response: MDE does not accept the requested change in language, since this would eliminate the Department's ability to determine whether the proposed change would adequately protect the environment. MDE points out that there is similar language that has been in active use in the solid waste regulations for over 20 years, which has proved itself useful in protecting the public health and welfare. Moreover, MDE must have sufficient time and information to determine whether a variance should be granted. Therefore, no change to the proposed regulations will be made in response to this comment.

.08 Reporting

114. Mirant - .08A(3) and (8): would require reporting certain data covering the previous five years. Some of the requested data are not currently being collected by the generators, making the data difficult, if not impossible, to acquire. Additionally, the same data for a given year will be submitted annually over a 5-year period, which is duplicative. We recommend that reporting include only data that are generated after the effective date of the rule. Further, we suggest that each report include only data generated in the previous year.

Mirant - .08A(8): Regulated entities may not have all of the data from the previous 5 years and annual submission of data from the preceding 5 years would be unnecessarily duplicative. The terms *"last 5 years"* should be changed to *"previous year."*

New Page - .08A(8): requires information on CCBs to be reported for the previous five years. This item should be clarified to include a starting date whereby going forward information will be available for a smaller time frame until the five-year date is reached. The requested data may not always be available prior to the regulation.

Constellation - .08A(8): Provides for five years of data in an annual report, which means that data will be repeated year after year. We recommend that the report be every 5 years, or that the data requirements be narrowed to encompass one year of information.

MDE Response: An important aspect of MDE's regulatory effort is to obtain information on the volume and types of CCBs generated over the last several years and how these materials have been managed. This information will help MDE assess whether there have been or may be environmental impacts associated with the disposal or use of CCBs. Therefore, MDE believes there is an important regulatory purpose being served by asking generators to provide data from the last five years and that generators should have records of most of the information requested. To the extent such information is not

available, generators should inform MDE and this issue will be handled by MDE on a case-by-case basis.

MDE recognizes the concern that annual reports will be partially duplicative if each report requires information for the last five years. Therefore, the regulation will be revised to provide that the first annual report submitted must provide information for the last five calendar years, but thereafter, each annual report need only provide information for the last calendar year.

For clarification, the word "calendar" will be added before the term "years" in two places where it appears in Regulation .08A.

115. Mirant - .08A(4): We suggest inserting the terms *"significant, final"* before *"modeling"* in order to avoid requiring submission of preliminary or draft modeling.

MDE Response: The commentor does not explain why MDE would not want to receive draft documents for comment before they are finalized. Some MDE units receive preliminary documents for review to help ensure that final documents meet their requirements. However, most importantly, MDE notes that the regulation does not necessarily require submission of the models or results of models themselves, but rather requires "Descriptions of any modeling or risk assessments, or both, conducted relating to the coal combustion products or their use." Please note that this requires that a modeling effort that may have been completed or may be ongoing should be identified and described in the annual report, but does not require the submission of either the final or interim work product as part of this report. Therefore, no change to the proposed regulations is needed in response to this comment.

116. Constellation - .08A(5): Add the word *"chemical"* before *"characterizations"*. "Regulation A(5) should be narrowed to encompass only the leachate and composition data. Other data, such as compaction or use related testing should be of minimal interest to the state and burdensome."

MDE Response: The information that MDE is intending to obtain pursuant to this subsection is chemical composition data and therefore, this proposed change will be accepted to clarify that reports of "*chemical*" characterizations should be provided.

117. Mirant - .08A(6) and (7): These proposed sections would purport to require a generator to sign a statement authorizing the Department to conduct inspections of processes that generate CCBs and to collect samples of CCBs. The Department either has the authority or it does not; it should not require regulated entities to confirm that the Department has the authority. Although Mirant intends to cooperate fully with the Department and provide reasonable access when requested, we object to the structure of these sections that would require an annual affirmation granting the Department unfettered access without limitation. Subsections (6) and (7) should be deleted.

Constellation - .08A(6) and (7): Suggest deleting these sections. "Regulation A(6) and (7) essentially seek to require a generator to provide unrestricted and broad access and

sampling, even where that access may exceed legal authority, exceed the bounds of reasonableness, or present a safety issue. Although as a generator we intend to provide reasonable access upon request and do not foresee any access problems, we oppose the structure of this regulation that seeks to mandate an annual affirmative grant of access."

MDE Response: MDE disagrees that the right to conduct inspections and collect samples exceeds legal authority. MDE has explicit statutory authority to do so. See §§1-404(k) and 9-261(c) of the Environment Article, Annotated Code of Maryland. Permittees further confirm and provide authority for MDE to conduct inspections and take samples under air permits. MDE's Solid Waste Program requires applicants for all of the permits that it offers to sign a statement granting inspection access, so that it can be provided to employees who may not be aware that access has been granted and who may attempt to interfere with an investigation by an MDE inspector in the performance of his or her duties. Having reviewed the regulation and noting that MDE already has inspection rights granted by law and in its permits, subsections (6) and (7) will be deleted from the proposed regulations as they are not needed.

118. Mirant -.08A(8)(c): The term *"direct recipient"* is vague. For example, is the "direct recipient" the first person in the chain of title/ownership or the trucking company that takes physical custody of the CCBs? Moreover, customer information may be confidential business information which should not be required to be provided. Subsection (8)(c) should be deleted.

Constellation .08A(8)(c): Due to business confidentiality issues, we recommend deletion of specific contact information set forth in subparagraph (c).

MDE Response: With respect to the term "direct recipients," MDE's purpose in this regulation is to determine if CCBs are being managed in a manner protective of the environment. To that end, it is of interest to MDE to know how those who obtain CCBs from generators for disposal or use, in fact dispose of or use the materials. Thus, it is not necessarily the truckers or haulers who are the parties of interest. Nor is it the ultimate retail purchaser of, say, wallboard that has been manufactured using coal combustion byproducts. For clarification, the term "direct recipients" will be changed to "persons to whom the generator sold, transferred or provided coal combustion byproducts for disposal, storage, use, or recycling." The regulation will be revised to have the generators maintain records of these persons rather than identify them in the annual report.

MDE recognizes the concerns about confidentiality of customer information. MDE will revise Subsection (8) to provide that generators must maintain records of the information required by .08A(8)(c). This information will be available for review by the Department upon request pursuant to Regulation .08. Such information will not be required to be provided in the annual report. Instead, subsection (8) will be revised to require that generators identify the location of disposal, mine reclamation, and use sites where CCBs have been placed during the applicable reporting period. MDE notes that if information provided by a generator is confidential commercial and financial information, it may not be disclosed under the Maryland Public Information Act.

119. Mirant - .08A(9): This prospective information is confidential business information that should not be required to be provided. Subsection (9) should be deleted.

Constellation - .08A(9): "Regulation (9) is business confidential information that should not be required by MDE. Rather than trying to protect the information we recommend omitting the requirement as unnecessary. The content of the information addressed in 9(a) and 9(b) is highly speculative, and will change over time. Furthermore, we believe that the five year period is arbitrary, and is unlikely to correspond to any particular regulatory needs. As a side note, other provisions already require reporting of changes in processes that will impact that nature of the coal combustion byproducts. The .08D report requires reporting in the event *that "changes in the raw materials or processes used by a generator result in the identification of new pollutants . . ."* This should provide the Department with the information to project and evaluation future issues. Also, TCLP and chemical characteristic data is already being reported and provide the Department with a similar tracking tool. In the event that MDE rejects this recommended deletion of the Regulation (9) reporting requirement, we recommend that the text clarify that the report contains *"current plans"* and provide that the plans are not subject to Department approval and recognize that the plans are not binding. Generators must have flexibility to respond to innovation, new opportunities and market conditions."

MDE Response: The information requested in paragraphs 9(a) and 9(b) is important to ensure that coal combustion byproducts are properly managed in the future and that adequate capacity for the safe disposal or utilization of the material will be available. There is nothing in Subsection 9 indicating that the plans are subject to MDE approval or that they are binding. The Department recognizes that a five-year plan is subject to adjustment based on market conditions, innovation and other considerations; however, providing this information will help in planning for environmentally responsible disposal or use of the material.

In evaluating the proposal, MDE recognizes that the detailed information in paragraph 9(c) may be speculative and notes the concerns about confidentiality as addressed in Comment 118. Paragraph 9(c) will be deleted from the proposed regulations. In its place, subsection (9) will be revised to require that generators identify the proposed location of disposal, mine reclamation and use sites where the generator anticipates that CCBs will be placed in the next five years. MDE notes again that if information provided by a generator is confidential commercial and financial information, it may not be disclosed under the Maryland Public Information Act.

120. Environment Maryland - Add the following new provisions:

> A(10): "*For each chemical that is regulated under the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA), 42 U.S.C. § 11023, the total amount contained in the annual volume of coal combustion byproducts removed from the generating site, regardless of the applicability of EPCRA reporting threshold or de minimis level;"*

A(11): "*Copies of any reports submitted under the EPCRA that include data related to the chemicals within the annual volume of coal combustion byproducts identified in A.(10).*"

MDE Response: In this comment, changes are recommended to require reporting of chemicals that are regulated under EPCRA (the Emergency Planning and Community Right-to-Know Act), regardless of whether that Act has established a lower concentration limit for reporting. This requirement seems to be excessive in that it goes beyond federal reporting requirements, and would be of no use to the Department in tracking the proper disposal of the material. As EPCRA requires reporting on its own terms, this is viewed as duplicative as well. Therefore, no change to the proposed regulations is needed to address this comment.

121. Mirant - .08C: The proposed language would require a generator to maintain records for *"a minimum of 5 years."* The terms *"a minimum of"* should be deleted for clarity.

MDE Response: MDE believes the current wording is sufficiently clear and therefore, no change is needed to the proposed regulations to address this comment.

122. PPRP - .08D.: Amend section to read *"…identification of new pollutants or significant changes in pollutant concentrations in CCBs…"*.

MDE Response: MDE does not believe the proposed change is necessary. Generators are required to provide annual laboratory reports of chemical characterizations under COMAR 26.04.10.08A(5), and are required to provide initial and ongoing characterization of coal combustion byproducts under COMAR 26.21.04.05 under a sampling plan acceptable to MDE which may include such information as MDE may require. These reports should show significant changes in chemical concentrations. If significant changes in chemical concentrations are due to changes in raw materials or processes, these could be addressed by the required sampling plan. Therefore, no change to the proposed regulations is being made to address this comment.

After reviewing this comment, however, MDE itself has determined that replacing the word "pollutants" with "chemical constituents" in the three places it appears in this Section D clarifies the section and is a more precise expression of the intent of the regulation. The term "pollutant" is typically used when a substance is discharged to the environment and pollutes the environment, whereas "chemical constituent" covers the components of the coal combustion byproducts upon generation, regardless of whether or not they are released or discharged, which is a more accurate description of the purpose of this section.

123. Alpha-Omega Environmental Management - .08E: add "*except information deemed proprietary and requested to be confidential*." Proprietary information should be excluded from public domain.

MDE Response: The concern of the commenter that proprietary information not be disclosed is addressed by the first phrase of this section: "Except as otherwise provided by law". Under Section 10-617(d) of State Government Article, Annotated Code of Maryland, a custodian of a public record is required to deny inspection of trade secrets, confidential commercial information, or confidential financial information. Therefore, no change to the proposed regulations is needed to address this comment.

COMAR 26.20.24 Special Performance Standards
.08 Utilization of Coal Combustion Byproducts

124. Mirant - COMAR 26.20.24.08 – This section is entitled, "Utilization of Coal Combustion Byproducts," but is specifically directed to CCB use in coal mine reclamation. MDE is planning to promulgate regulations related to beneficial use of CCB in the near future. The title of this section should be changed to more accurately reflect the intent of the section and avoid confusion with future regulations. We suggest adding "in Coal Mine Reclamation" to the title.

MDE Response: Because this Regulation .08 comes under Chapter 24 (entitled "Special Performance Standards") of Subtitle 20 (entitled "Surface Coal Mining and Reclamation Under Federally Approved Program"), it is already clear that Regulation .08 is dealing with utilization of coal combustion byproducts in coal mines so the suggested additional language is not necessary and MDE declines to make the requested change.

.08A Purpose and Scope

125. Constellation - (1) This regulation establishes certain minimum standards pertaining to the use of coal combustion byproducts in surface coal mining and reclamation operations and in abandoned coal mines *after April 1, 2008*.
(2) Coal combustion byproducts may not be used in surface coal mining and reclamation operations or in abandoned coal mines *after April 1, 2008*, except in accordance with this regulation.
(3) *Surface coal mine and abandoned coal mine reclamation activities permitted prior to April 1, 2008 may continue to operate under the Department's authorization, except that the Department reserves the right to modify an existing authorization to require additional controls or requirements as it considers necessary to protect public health and the environment or to prevent nuisance conditions*.
(4) Compliance with this regulation does not relieve…

Comment: The proposed regulations should not be retroactive for previously authorized coal mine and abandoned coal mine reclamation activities. A previously reclaimed or a site being reclaimed with coal combustion byproducts under prior authorization should not be out of compliance simply because they do not have newly required authorizations and cannot meet newly imposed standards. We are interpreting that the Purpose and Scope of this Chapter applies to the entire Chapter. We encourage clarification throughout the text if the Department does not agree with this interpretation or feels that additional clarification is necessary.

MDE Response: The comment regarding the effective date and retroactivity of these regulations is addressed in Comment 110. New sites or sites that expand beyond the currently approved area will need to comply with the provisions of this regulation.

.08B Definitions

126. Constellation - 26.20.24.08B(2) (Definitions under Utilization of Coal Combustion Byproducts in Surface Mine Reclamation)

(b) Coal combustion byproducts.
(i) "Coal combustion byproducts" means the residue generated by or resulting *primarily* from the burning of coal.
(ii) "Coal combustion byproducts" includes flyash, bottom ash, boiler slag, pozzolan, and other solid residuals removed by air pollution control devices from the flue gas and combustion chambers of coal burning furnaces and boilers, including flue gas desulfurization sludge and other solid residuals recovered from flue gas by wet or dry methods.
Comment: This change is to make this definition conform to that set forth in 26.04.10.

MDE Response: The intent of this regulation was not to regulate materials other than coal combustion byproducts. However, MDE does realize that minor amounts of products other than coal are sometimes burned. MDE does not agree with this change to the regulation. Please see Comment 66 for further clarification concerning the burning of coal with other materials.

127. New Page - In sections 26.20.24.08B. and D. the regulations require analysis for "Alkaline Coal Combustion Byproducts (ACCBs)". Specifically the text calls for determinations of "Net neutralization potential of 5 tons per 1000 tons CaCO3 equivalents", and "Maximum potential acidity in terms of tons per thousand tons of material". These two items are not further defined allowing for uncertain interpretation of their meanings. We request that the definitions of these terms be expanded to include specific testing and calculation references or descriptions.

MDE Response: MDE does not agree with this comment. These terms refer to the two major components of acid-base accounting analysis, a routine requirement of coal mine permit applications. Laboratories that are involved in analysis of coal overburden routinely make the required determinations and the inclusion of additional details in the regulations is not warranted. MDE will provide guidance on this issue during the application process.

.08C Conditions for Utilization

128. New Page - In section .08C(1) we request adding a new item "(_) Applied in conjunction with alkaline materials to achieve a calculated net neutralization potential of 10 tons per 1000tons CaCO3 equivalent or greater.

MDE Response: MDE interprets the comment to allow the concept of layering alkaline material with CCBs that do not meet the minimum level for alkalinity. Rather than add a new item to regulation .08C(1) as requested, the Department will revise the definition at .08B(2)(a) to remove the words "through processing" from the definition. The removal of the words "through processing" makes clear the Department's intent that the required alkalinity level could be achieved either at the site of generation or by the addition of alkaline materials by layering or applying them in conjunction with the CCBs at the point of placement so long as they achieve the required alkaline content. The net alkalinity would still have to be a minimum of 5 tons per 1,000 tons of $CaCO_{3;}$ however, it is likely that CCBs layered with alkaline materials when placed at a site would be required to have a higher level of alkalinity. Regulation .08B(2)(a) allows for a higher alkaline level, and the Department could specify the higher level in its mining permit. See also the response to Comment 138.

.08D Coal Combustion Byproducts Utilization Request

129. Anne Arundel County - 26.20.24.08 (D) (4) (k): "A copy of a solids analysis of the coal combustion byproducts performed within the last 60 days BY A STATE CERTIFIED LAB, …"

26.20.24.08 (D) (4) (l): "A copy of a Toxicology Leaching Procedures (TCLP) leachate analysis of the coal combustion byproducts performed within the last 60 days BY A STATE CERTIFIED LAB,…"

26.20.24.08 (D) (4) (n): "A copy of water quality analyses for the mine permit drainage control system performed within the last 60 days BY A STATE CERTIFIED LAB,…"

MDE Response: MDE does not agree with this comment. MDE only certifies laboratories for the analysis of drinking water, not for the analysis of wastewater, water quality, or solids. No change to the proposed regulations is needed to address this comment.

130. PPRP - Coal Combustion Byproducts Utilization Request, D(4)(h): PPRP is uncertain of the intent of the sentence "Type of fuel burned to generate the coal combustion byproducts; ". The sentence seems to be redundant or inconsistent with the definition of CCBs. Please clarify whether this sentence is intended to address combustion products of co-fired operations.

MDE Response: The purpose of the question on the utilization form is to determine whether the generator is burning clean coal or coal refuse coal which may add other constituents to the ash.

131. **Mirant** - COMAR 26.20.24.08D(4)(l) – The proposed rule would require that the Toxicity Characteristics Leaching Procedure (TCLP) be used for analysis of CCBs. New methods of analytical extraction are under development and review by credible

organizations, including the American Society of Testing and Materials (ASTM) that may be more appropriate than the TCLP for evaluation of CCBs. Sufficient flexibility should be built into the rule to account for new analytical methods that become available.

MDE Response: MDE agrees that the flexibility would be desirable and will amend the proposed regulation by adding "or other test approved by the Department" after the words "leachate analysis".

132. PPRP - Coal Combustion Byproducts Utilization Request, D(4)(n): For consistency, include boron and molybdenum in water quality analyses for mine permit drainage control system and initial and ongoing groundwater characterization (26.21.04 Utilization of Coal Combustion Byproducts in Surface Mines Reclamation, 0.05, Initial and Ongoing Characterization, B.(1), and 0.07 Monitoring, C. Monitoring and Reporting Requirements, Table I). Pennsylvania (using SPLP methods) requires CCB leachate testing for boron and molybdenum. Lithium is suggested for inclusion in the leachate constituent list due to the relatively high concentrations in CCBs derived from bituminous sources in the Mid-Atlantic Highlands.

MDE Response: As requested, the regulation will be amended to include boron and molybdenum in COMAR 26.20.24.08D(4)(n) and 26.21.04.07D –Table I. MDE notes that boron and molybdenum are already included in 26.21.04.05B(1).

MDE has also determined that it is appropriate to include boron and molybdenum in the list of parameters to be analyzed in the solids analysis under COMAR 26.20.24.08D(4)(k), and the proposed regulation will be amended accordingly.

In response to the comment, lithium will be added to COMAR 26.20.24.08D(4)(k) and (n) and 26.21.04.07D –Table I. Lithium is already included in 26.21.04.05B(1).

MDE does not believe it is appropriate to include boron, molybdenum or lithium in the list of parameters for the TCLP leachate analysis required by COMAR 26.20.24.08D(4)(l). The TCLP analysis for inorganic chemicals is intended to model the leachability of the metallic cations specified in the EPA protocol for that test, in order to determine whether they are leachable at levels that would be considered hazardous under federal and State hazardous waste regulations by comparing them to regulatory standards developed for those chemicals. The extraction protocol is not necessarily appropriate for these other elements, and in the absence of comparable standards would not produce usable information. However, the proposed regulations do allow MDE to require additional information as needed (see COMAR 26.20.24.08D(4)(u)), which could include the addition of these parameters if it was felt appropriate. The proposed regulation is also being amended to allow the Department to approve the use of alternative test protocols that may be found to be superior to the TCLP for modeling the behavior of CCBs in certain applications, and additional parameters could be required by MDE at that time.

133. New Page - .08D(4) would include a new item "(_) If applying CCBs and alkaline materials directly at the site, a description of the application approach will be included in the

Utilization Request. The descriptions will include layering strategies, application rates, and any other information the department requires to determine that the site will meet the conditions in section .08.C.(1).

MDE Response: MDE does not agree that this revision is necessary. Proposed COMAR 26.20.24.08D(4)(t) requires a description of the processes and procedures to be used to augment the neutralization potential of the CCBs, including a description of the type and quantity of any materials to be used to increase the net neutralization potential of the CCBs.

134. New Page - In section 26.20.24.08D(4)(s) a narrative description of the potential hazards to workers and a protection plan to address these hazards are required. We feel that the issue of worker safety is already addressed through other agencies and regulations. MSDS sheets already specify both potential hazards and the proper personnel safety equipment necessary to work with these materials. Further, as section (s) is written, to what extent should the description of potential hazards go? Should each constituent of the CCB be addressed and to what extent; should each constituent be addressed in the plan? If section (s) remains in the regulation, further clarification of its requirements is needed.

MDE Response: Clarification of the issue of worker safety is needed to address this comment from New Page. MDE has no intent of addressing impacts to workers from the generating source. Rather the impacts of concern are to the miners who will be handling the CCBs and may not be aware of the Material Safety Data Sheets typically generated at the generation facility. Therefore, it is expected that the generator will provide the utilization site operator with information and recommendations, if any, for the safe handling of the CCB material. The information typically is developed in the Material Safety Data Sheets and can be a part of the application to use CCBs at a site.

.08F Testing and Monitoring

135. Mettiki - Proposed 26.20.24.08 (F) - Testing and Monitoring: A small volume of a relatively innocuous constituent with low leaching potential should require less rigorous characterization once determined in the initial characterization contained in Section 26.20.24.08 D (4) (k and 1). There is ample evidence that if the fuel source stays constant and the combustion process has not changed, the byproducts will remain chemically consistent. We support the language "...or on such other basis as the Bureau may require...".

MDE Response: The preface from the commenter suggests that analysis may not be necessary annually. The intent of the regulation was to provide that it shall be required annually and may be required more frequently than annually. MDE declines to accept the requested change.

.08G Unauthorized Use

136. Constellation - 26.20.24.08G - Comment: We recommend deletion of this text. For an explanation, please see the comment to 26.21.04.12, below, concerning the same issue.

MDE Response: To address the comments, the proposed regulations will be revised to provide that non-compliance "may be" a disposal of solid waste as determined by the Department and subject to solid waste laws. This change provides the Department flexibility to determine the seriousness and impact of the violation. The Department understands that a violator would be unable to immediately obtain a solid waste permit, but the Department could nonetheless take enforcement action pursuant to the solid waste laws if warranted.

137. PPRP - COMAR 26.20.24 Special Performance Standards, .08 Utilization of Coal Combustion Byproducts: Leachate and pH characteristics for the resulting CCB solidification/stabilization product should be as specified in COMAR 26.20.24 Special Performance Standards .08 Utilization of Coal Combustion Byproducts.

MDE Response: MDE is unsure of the intent of this comment regarding solidification/stabilization. If the intent is $CaCO_3$ content, it is defined in regulation .08B, which defines alkaline coal combustion byproducts. As previously noted in the response to Comment 57, CCBs utilized in coal mines will be required to be alkaline, which does not require further stabilization, and in noncoal mine reclamation and disposal sites, CCBs will be placed in lined containments, and so are not required to be stabilized.

138. New Page - Section 26.20.24.08 Utilization of Coal Combustion Byproducts narrows the potential for using CCBs in coal mine reclamation work by only allowing ACCBs to be used. The intention of the use of ACCBs for mining reclamation work is in part to provide some neutralization potential to offset the potential acid runoff from these areas. By restricting the reclamation work on these sites to ACCBs, the department is preventing the use of other strategies to accomplish the same goals. Some CCBs may not make the definition of ACCBs but would be just as useful for reclamation work if applied in conjunction with alkaline materials. For instance, due to the expense and difficulty in mixing, the CCBs could be used in conjunction with layered alkaline materials to provide the same or better level of acid neutralization for the site.

MDE Response: The intent of this regulation is that ACCBs, that is, coal combustion byproducts that exhibit a net neutralization potential of 5 tons per 1000 tons $CaCO_3$ equivalent or greater can be used in coal mines to offset acid runoff from coal mine sites. Regulation .08B(2)(a) will be revised to remove the words "through processing" as they are not necessary to accomplish this intent. The Department agrees that processing offsite is not always necessary to achieve the objective of the regulation. The addition of alkaline materials to CCBs, for example, by layering or applying lime in conjunction with the placement of CCBs can be an effective means to create ACCBs and achieve net

neutralization potential. The specifics means as to how the ACCBs will be created and/or utilized in accordance with the regulations will be described in the narrative required by Regulation .08D(4)(t) and approved by the Department under Regulations .08C.3. and .08E(4). See also the response to Comment 128.

139. Environmental Integrity Project - MDE should not assume that the use of alkaline-based coal combustion waste for "mine reclamation" is safe. The use of alkaline-based CCW to reclaim abandoned coal mines ("minefills") may not be as beneficial as Maryland assumes in its proposed regulations. In its 2006 report on CCW, NRC pointed out that, "[of] the three methods currently available for disposal of CCRs (surface impoundments, landfilling and minefilling), comparatively little is known about the potential for minefilling to degrade the quality of groundwater and/or surface waters, particularly over longer time periods. Additionally, there are insufficient data on the contamination of water supplies by placement of CCR 's in coal mines, making human risk assessments difficult." What is known about minefilling is not reassuring. The NRC report warns that, "There are a substantial percentage of cases where the acid neutralization potential has been overestimated, especially with static test." While not a coal-mine reclamation project, the Faulkner site in Charles County pumps groundwater over a series of alkaline pits in an effort to reduce the acidity of water discharged from the site. Although discharge reports indicate that these treatment cells increase pH, the treatment system has had little impact on groundwater or nearby surface waters, which remain highly contaminated. A 2006 evaluation by Maryland's Department of Natural Resources found that these alkaline treatment cells are not effective at reducing sulfates, which can contribute to acidity and the presence of certain heavy metals like cadmium and selenium. The National Research report noted that metals like selenium and arsenic mobilize under pH neutral circumstances, and warned that "acid neutralization will not reduce the mobility of all contaminants of concern from the CCR."'

In Pennsylvania, where minefilling is widespread, monitoring by the Clean Air Task Force showed high levels of acid runoff and metal contamination in surface and groundwater below minefills that had been treated with CCW. The evidence suggests that mobilization of these contaminants can increase over time.
Recommendation:
Maryland should not establish a regulatory presumption that the use of alkaline based coal combustion waste is an effective method of neutralizing acid based runoff from abandoned coal mines. At a minimum, any proposed regulation of this practice should address the specific concerns and recommendations identified in the NRC 2006 report.

MDE Response: MDE agrees that there is much to be learned regarding the use of alkaline based coal combustion byproducts at mine sites. The data gathered to date both in Maryland and surrounding Appalachian states confirms the positive impacts from treating acidic water discharges with an alkaline-based material. Additional monitoring will be done and the long-term impacts studied. The potential for positive impacts is compelling at this time and should be pursued in a controlled environment. No change is needed to the proposed regulations to address this comment.

COMAR 26.21.04 - Utilization of Coal Combustion Byproducts in Noncoal Surface Mine Reclamation

140. New Page - We suggest the Chapter Title of COMAR 26.21.04 be changed to reflect that the regulation applies to "Non-Coal Surface Mine Reclamation".

Mettiki - We would suggest the Chapter Title be changed to reflect that this regulation applies to "Non-Coal Surface Mine Reclamation". The coal mine regulations proposed in 26.20.24.08 address coal relevance and the wording as proposed may be confusing.

MDE Response: MDE concurs with the comments and has amended the title to be "Utilization of Coal Combustion Byproducts in Noncoal Surface Mine Reclamation".

.01 Scope

141. Constellation - The proposed regulations should not be retroactive for previously authorized noncoal surface mine reclamation activities. A previously reclaimed site or a site being reclaimed with coal combustion byproducts under prior authorization should not be out of compliance simply because they do not have newly required authorizations and cannot meet newly imposed standards. We are interpreting that the Scope of this Chapter applies to the entire Chapter. We encourage clarification throughout the text if the Department does not agree with this interpretation or feels that additional clarification is necessary.

Proposed changes:
A. The purpose of this chapter is to establish certain requirements pertaining to the use of coal combustion byproducts in the reclamation of a noncoal surface mine *after April 1, 2008*.

B. Coal combustion byproducts may not be used in noncoal surface mines after April 1, 2008, except in accordance with this regulation.

C. *Surface noncoal mine reclamation activities permitted prior to April 1, 2008 may continue to operate under the Department's authorization, except that the Department reserves the right to modify an existing authorization to require additional controls or requirements as it considers necessary to protect public health and the environment or to prevent nuisance conditions*.

D. Except as otherwise specifically provided in this chapter, this chapter applies to persons engaged in the generation, storage, handling, processing, recycling, or use of coal combustion byproducts that are used or are to be used in the reclamation of a noncoal surface mine.

E. Compliance with the provisions of this chapter does not relieve a person from the duty to comply with any other applicable federal, state, and local laws, regulations, and ordinances.

Rich & Henderson - This provision should clearly articulate that the chapter applies solely to non-coal surface mine reclamation receiving Coal Ash after the effective date of these regulations. Further, both sub-sections A and B include unnecessary phrases which create unnecessary ambiguity. The chapter applies to reclamation of mines with Coal Ash and should say so.

Proposed change:
A. The purpose of this chapter is to establish certain requirements pertaining to the ~~use of coal combustion byproducts in the~~ reclamation of a non-coal surface mine with coal combustion byproducts *after the effective date of this chapter*.

B. Except as otherwise specifically provided in this chapter, this chapter applies to persons *who deliver to, receive for placement or place coal combustion byproducts at* ~~to engaged in the generation, storage, handling, processing, recycling, or use of coal combustion byproducts that are used or are to be used in the reclamation of~~ a noncoal surface mine *after the effective date of this chapter*.

MDE Response: MDE does not agree with these comments and has previously stated that the regulations will become effective on the effective date set forth in the final regulations and will not be applied retroactively, except that existing disposal sites are subject to the provisions of COMAR 26.04.10.04E and F of the regulations.

.02 Definitions

142. Alpha Omega Environmental Management - B(1)(c) – remove this section to allow flue gas desulfurization (FGD) materials as reclamation material. The properties of FGD are very similar to other CCB and does not constitute an additional threat to water or air quality. Also, the liner requirements for mine reclamation sites are essentially the same as an industrial waste landfill that does allow FGD. This applies to COMAR 26.21.04.03B(1) as well.

PPRP - B.(1)(c) and .03 B.(1): FGD should not be excluded from utilization of CCBs in mine reclamation. Used in conjunction with a lime activator, fly ash and bottom ash, an addition of FGD contributes to an extremely low porosity CCB material that is suitable as structural fill. A good example of FGD utilization in a fill is Rostraver, PA Airport runway – a mix of FGD (calcium sulfite and calcium sulfate), fly ash, quicklime, and, in some cases, bottom ash. Please see additional information at the website address listed below. The material is suitable for conventional construction methods of loading, hauling, and placement.
http://wvwri.nrcce.wvu.edu/programs/cbrc/publications/2004/Winter_04.pdf

Constellation - B(1) - (a) "Coal combustion byproducts" means the residue generated by or resulting *primarily* from the burning of coal.

(b) "Coal combustion byproducts" includes flyash, bottom ash, boiler slag, pozzolan, and other solid residuals removed by air pollution control devices from the flue gas and combustion chambers of coal burning furnaces and boilers, *including flue gas desulfurization sludge and other solid residuals recovered from flue gas by wet or dry methods*.

Comment: The definition of coal combustion products should be identical to that found in 26.04.10.02, and that includes flue gas desulfurization byproducts.

To the extent that the Department has questions about flue gas desulfurization byproducts, we believe that this arises in connection with only a narrow subset of this material. Most flue gas desulfurization byproducts either are or can be stabilized to be fully functional as a structural fill. However, it is possible that some of these materials may be less appropriate for reclamation purposes due to water solubility or instability of that specific material. Rather than complicating the definition of Coal Combustion Byproducts, we recommend that use of this particular material be restricted in the General Requirements language (see 26.21.04.03B) rather than through the definition. This would place the restrictions in one location, and allow the restrictions to be more reasonably and precisely tailored.

MDE Response: MDE does not accept these comments at this time, but may consider the use of flue gas desulfurization sludge in noncoal surface mine reclamation in a future rulemaking.

143. Rich & Henderson - The definition of "Site" is too broad and all encompassing. It extends to areas of the mine which have not been reclaimed using Coal Ash. The phrase "including areas contiguous to the mine" in the definition creates uncertainty. For example, it could extend to properties owned by others or alternatively could provide a basis for the Department to assert jurisdiction over all property owned by the same company no matter how far it removed from the reclaimed or mined area, merely because the property has not been subdivided. It is not unusual for only portions of property to have been reclaimed with coal ash (as is the case of the Gambrills mine owned by BBSS). The definition of "Site" should be limited to the area of the surface mine reclaimed with coal ash and a reasonable buffer. The focus of the buffer should be to

encompass an area necessary to ensure the proper operation of the cap, liner, surface, water drainage and surface water drainage features. The appropriate buffer will be determined by the unique characteristics of each site.

Proposed Solution:
B.(14) "Site" means *those areas of* a noncoal surface mine where coal combustion byproducts are used, or are proposed to be used, for reclamation of the surface mine, ~~including areas contiguous to the mine~~ *including an appropriate buffer*.

In addition, Commentors propose adding a definition for the word buffer:

B.(?) *"Buffer" means an area extending from the edge of the area at a non-coal surface mine where coal combustion byproducts have been placed for reclamation deemed necessary by the Department to achieve the water and air quality protection standards established by this chapter and designated in the Application for Use for the Site approved by the Department*.

MDE Response: The Department will clarify the definition of "Site" by adding at the end of the definition: "which are covered by the surface mining permit." MDE declines to add a definition for "buffer" as suggested.

.03 Authorization of Use and General Requirements

144. PPRP - There is no explicit specification of CCB placement in proximity to potable or water supply wells.

MDE Response: Part of the permit review process will be to identify existing wells within 1250 feet of the site. (See Regulation .04C(3)(g)) Groundwater flow direction will also be evaluated. It would be difficult to define a specific restriction to potable water supply wells without knowing the site-specific groundwater and geologic information such as groundwater flow direction and the actual water bearing geologic formations. The protection of potable supplies will be a primary concern for any application proposing potential impacts. The Department will be looking to minimize contact with waters of the State and precipitation as much as possible.

145. Environment Maryland - A.(2): This provision should be modified to read as follows: "The Department shall review and approve the use as part of a separate coal combustion byproducts use permit in accordance with the proposed chapter and the provisions of COMAR 26.04.10 and 26.21, and subject to public notice, comment and hearing."

MDE Response: The Department does not agree with the comment to provide a separate permit process for the use of CCBs at a mine reclamation site. The current permit process provides ample opportunity for public input and comment and hearings. To require a separate permit process would require a statutory revision.

146. Alpha Omega Environmental Management - B.(1) – remove this section entirely. See comments above for COMAR 26.21.04.02B(1)(c).

MDE Response: MDE does not agree with this comment and prefers to retain the language which prohibits the use of flue gas desulfurization sludge in the reclamation of noncoal surface mines. MDE may address the use of flue gas desulfurization in noncoal surface mines in a future rulemaking.

147. Constellation - B. New proposed language: *(1) The use of coal combustion byproducts in the reclamation of a noncoal surface mine shall be designed to provide short-term and long-term structural performance and stability.*

Comment: Instead of excluding a broad category of flue gas desulfurization sludge, we recommend that the underlying issue be addressed for all coal combustion products in the surface mine reclamation context. This can be accomplished by setting a baseline requirement of consideration of the engineering issues and the long-term stability of material. We suggest that structural issues be addressed for all coal combustion byproducts as part of the design process. This approach is consistent with ASTM E 2277-03, Standard Guide for Design and Construction of Coal Ash Structural Fills, which states that "in order to perform satisfactorily, any fill material must support its own mass, that of the loads to be placed on it, and have acceptable settlement. Each of these aspects is analyzed as part of the design process." ASTM E 2277-03, Section 7.5. For example, PADEP has established performance standards for beneficial use of stabilized flue gas desulfurization (FGD) gypsum in mines. The performance standards include a minimum hydraulic conductivity of 10^{-6} cm/sec and a compressive strength of 40 lbs/in^2. Additional details are available in the PADEP General Permit for Processing/Beneficial Use of Residual Waste, Permit No. WMGR111. If this suggested provision is included, then the overly broad restriction governing flue gas desulfurization sludge can be deleted.

MDE Response: The Department may address the use of flue gas desulfurization in noncoal mine reclamation in a future regulation. At this time, however, the regulation will not be amended. The suggested ASTM standard will not be adopted by MDE at this time but will be considered in the future if the regulations are amended.

148. Environment Maryland - B.(2)-(6) and (14): Eliminating from this use only fly ash that exceeds the TCLP toxicity limits defined in 40 CFR § 261.24 is not adequate for the protection of the State's ground and surface waters. The experience at the Gambrills, Anne Arundel County mine reclamation site shows that even though the fly ash registered well below toxicity limits, it generated leachate with metals concentrations well above the toxicity limits, ultimately contaminating drinking water supply wells. To minimize leachate discharge from the site, the following conditions must be part of the coal combustion byproducts use permit:
(i) Coal combustion byproducts shall be placed in layers and compacted to at least ninety-five percent (95%) of its maximum density based on ASTM D698 (Standard Proctor), or to a permeability of less than 10-5 cm/sec. Thickness of each layer shall not be greater

than twelve (12) inches. The compaction layers shall be tested and certified, and supporting documents submitted to the Department on a monthly basis;

(ii) The site shall be designed to prevent ground and surface water pollution. There shall be a functional liner and leachate collection system as specified in COMAR 26.01.07.C. (12); and

(iii) A permittee shall provide a minimum of two (2) upgradient and three (3) downgradient monitoring wells at a site.

MDE Response: MDE notes that requirements for a liner, leachate collection system, and monitoring wells are already included in the proposed regulation, and specific permit conditions may be imposed to highlight additional requirements. Mining permits are conditioned with many standards and special requirements and could incorporate any condition as needed. Several of the provisions suggested by the commentor would, in fact, be incorporated in the application and committed to in the reclamation plan. A special condition could be added to the permit to meet site conditions as needed. Verification of the compaction will be required in the plan required in Regulation .04. No change to the proposed regulations is needed to address this comment.

149. PPRP - B.(3) - This paragraph should be reworded to avoid precluding the use of accepted solidification/stabilization technology to eliminate or reduce the leaching characteristics of problematic CCBs.

MDE Response: The TCLP toxicity limit is an appropriate test; however, the regulation does not preclude the use of solidification/stabilization techniques, and if the CCBs pass the TCLP toxicity limits test after solidification/stabilization, they would be acceptable.

150. Alpha Omega Environmental Management - B.(4) -reduce compaction requirement to 90% instead of 95%. The difference from 90% to 95% compaction provides little, if any, benefit and does not justify the additional cost to do so.

MDE Response: MDE concurs that the difference in the compaction level will be of minimal impact and will therefore amend the proposed regulation to change the rate of compaction to "a minimum of 90%".

151. Mirant - B.(4) – The proposed rule would require that CCBs not be applied in layers exceeding 12 inches in thickness when used in non-coal surface mine reclamation. At times, some CCBs including bottom ash and slag may be much larger than 12 inches in diameter. The restriction of placing layers in 12-inch thicknesses would require difficult and potentially expensive additional processing of the CCB in order to use it. We recommend a 24-inch limit for layer thickness, which will be similarly environmentally protective to the proposed thickness.

MDE Response: MDE does not agree with the proposal to increase the lifts to 24 inches because that may allow less compaction and may also result in the site being open for longer periods of time resulting in an increased risk of leachate.

152. Alpha Omega Environmental Management - B.(5) – replace the phrase "except where post-mining land use requires minimal variation and is" with " unless approved by the county where the site is located". This allows for greater control by the local county rather than MDE as to the final appearance of the reclamation site.

MDE Response: Use of CCBs at mine sites will be authorized by the State surface mine permit as part of a reclamation plan. Final contour is an integral part of any reclamation plan and should remain a part of the State surface mine permit and should not be delegated to the local county.

153. Alpha Omega Environmental Management B.(6) – replace "regional" with "high" groundwater table.

MDE Response: MDE agrees that the existing wording may not be consistent with Regulation .04C(5) and will revise .03B(6) so that the language is consistent.

154. Constellation - B.(6) - Consistent with other solid waste regulation, "the liner system shall be located entirely above the composite high water table and bedrock. A minimum buffer distance, including the thickness of the prepared subbase, shall be required between the bedrock elevation and the maximum expected ground water elevation." COMAR 26.04.07.07 (12)(b).
Proposed change: B.(6) - Coal combustion byproducts may not be placed in ground or surface waters and may not be placed within 3 feet of the regional groundwater table, unless the Department approves otherwise upon a demonstration that groundwater contamination will not occur. *The minimum buffer distance includes the thickness of the prepared subbase*.

MDE Response: With respect to the buffer between the base of the liner system and groundwater, Constellation seems to be suggesting that the vertical buffer be eliminated. MDE considers that a minimum vertical buffer between the liner and leachate collection systems of 3 feet above the maximum expected groundwater elevations be maintained to ensure that the structural and hydraulic integrity of the liner system is not degraded. Liners generally contain layered components of synthetics and various earthen materials. Saturation of the earthen materials can change their response to loads, and can alter the coefficient of friction between layers. Therefore, maintaining the liner subbase layers in an unsaturated condition is generally considered to be a stability requirement. The buffer to bedrock is to ensure that compaction of the underlying geologic material due to the load that will be imposed by the overlying CCB materials does not cause undue strain on the liner and other geotechnical fabrics by providing a physical cushion to moderate stresses caused by differential settlement.

While it is true that the existing solid waste regulation cited (COMAR 26.04.07.07 (12)(b)) includes the compacted subbase in the buffer zone, in practice MDE's Solid Waste Program does require the additional separation for the reasons stated above. The existing language of the solid waste regulation dates back to 1987 and will be changed at the next regulatory re-write. The CCB regulation proposed here is conservative and protective from an engineering standpoint. No change to the proposed regulations is needed to address this comment.

155. Anne Arundel County - B.(6): "Coal combustion byproducts may not be placed in ground or surface waters and may not be placed within 4 feet of the regional groundwater table…"

MDE Response: MDE disagrees with the proposal to increase the groundwater separation to 4 feet. It should be noted that a) the buffer is 3 feet to the base of the compacted subbase layer, which provides an additional 2 feet; and b) the buffer is 3 feet above the maximum expected groundwater elevations. Therefore, the vertical buffer will generally be greater than 3 feet. For these reasons, no change to the proposed regulations is needed to address this comment.

156. PPRP - B.(6): Since most Portland cement manufactured in Maryland (and elsewhere) contains significant amounts of fly ash, this paragraph will preclude the use of most Maryland-manufactured cement in concrete to be used in tremie operations for placement under surface water or below the regional groundwater table. The language of this section should be modified to exclude manufactured products (e.g., cement, Ready Mix, concrete, etc.) containing fly ash, and CCB grouts conforming to solidification/stabilization specifications.

MDE Response: The Department does not agree that the current wording of the proposed regulation prohibits the use of manufactured products such as Portland cement. The Department will address these uses in future regulations regarding beneficial uses.

157. Constellation - B.(7) – Deletion of this paragraph is suggested. Comment: The size restriction may have been reasonable in certain contexts where no liner was utilized. However, we recommend deletion of this text because the new liner and other pollution control requirements will now address risks associated with leachate generation. Furthermore, to the extent that dust control may be an issue, dust control is already addressed under .04.03B(10) and may or may not be minimized by the amount of open area, depending upon the particular site plan and activity.

MDE Response: The Department disagrees with the proposal to remove the maximum disturbance limitation. It is common practice to limit open acreage in mining operations. This practice is done to limit the area exposed to water infiltration, dust generation and also limits the Department's exposure to reclamation costs should the operator abandon the site with limited bond resources. No change to the proposed regulations is needed to address this comment.

158. Alpha Omega Environmental Management - B.(8) – remove the limitation for immediate placement and compaction. This places an undue burden on operators that may experience temporary equipment failure or other unforeseen conditions. As long as the site operator can meet the water and dust control requirements, CCB should be allowed to be placed within the active fill area, but not compacted.

Constellation - B.(8) Coal combustion byproducts at a site shall be [Delete: "immediately"] placed and compacted within a reasonable time period, which under ordinary circumstances shall be daily. Stockpiling for more than 21 days must be covered. [Delete: "and may not be stockpiled."]

MDE Response: MDE declines to make the requested changes. Unforeseen circumstances where permittees cannot meet the requirements of this section will be dealt with by the Department on a case-by-case basis. The purpose for not allowing stockpiling at mine sites is to reduce the impacts of dust and airborne particles.

159. Rich & Henderson - The requirements do not provide for the temporary storage of coal combustion byproducts. Subsection B.(8) requires immediate placement and compaction, and allows no stockpiling and subsection 10 prohibits the storage of uncompacted Coal Ash. This will impose needless logistical difficulties (adding unnecessary cost) for development of mining sites reclaimed with Coal Ash, without adding any environmental benefit. During development of land that has been reclaimed with Coal Ash it is foreseeable that some Coal Ash will be excavated for several reasons: to allow for grading of the reclaimed land to promote drainage; to allow for the installation of utilities and foundation materials; and for maintenance of cover materials or repair of erosion. Exemption of short-term, temporary storage of coal combustion byproducts would accommodate these and other reasonable activities.

Proposed Solution:
Commentors propose adding a new subsection B.(16):
B.(16) Any coal combustion byproducts excavated or moved during development of a Site shall be placed in a Storage System or removed from the Site within thirty (30) days of being excavated or moved.

MDE Response: Post-reclamation land use issues will be addressed further in a future rulemaking, so no change will be made to the proposed regulations to address this comment at this time.

160. Alpha Omega Environmental Management - B.(9) – remove this section since there are already leachate collection and no additional impact to surface water. At a minimum, replace "15 days" with "30 days."

Constellation - B.(9) We recommend deletion of this text because the new liner requirements will now address leachate generation. We also note that the proposed restriction is more stringent than that required for sanitary landfills, which may have daily cover mandates, but have no requirement to prevent infiltration during short term interruptions in activity. However, should the Department retain this requirement, we

suggest that the more appropriate performance standard would be to "minimize" rather than "prevent" infiltration**.**

MDE Response: The Department does not agree with the suggestion to eliminate section B(9). The intent of B(9) is to minimize the risk of excessive leachate and dust generation. The ultimate intent is to prevent the infiltration of groundwater and surface water. Even in a lined mine cell, there may be circumstances where perched groundwater discharging from nearby geologic materials, or surface water running off adjacent areas or completed parts of the reclaimed mine, could run onto the active area of the mine reclamation. By grading and covering exposed CCBs, infiltration of water into the CCBs can be minimized which furthers the ultimate goal of preventing infiltration of groundwater and surface water. Therefore, no change is proposed to address this comment.

161. Constellation - B.(10)(a)-(c): Suggestions to the dust prevention provisions are designed to incorporate reasonable flexibility, while still supporting the Department's goals of minimizing any potential environmental impact.

Proposed changes:
(10) Adequate measures shall be taken to minimize dust at a site as follows:
(a) A person shall control dust by moisture conditioning the coal combustion byproducts before they leave the coal combustion byproducts generating facility *or by handling them in sealed containers designed for transportation of powdery solids and moisture conditioning them prior to off-loading them to the ground*;
(b) A person shall control dust by spreading and compacting the coal combustion byproducts *within a reasonable time period, which under ordinary circumstances shall be daily*; [delete "upon arrival at a site"]
(c) A person may not *stockpile* [delete "store"] uncompacted coal combustion byproducts at a site *for more than 21 days without temporary cover*;

Alpha Omega Environmental Management - B.(10)(b and c) – remove these requirements while maintaining the requirement for water and fugitive dust control. See comments for B.(8) above.

MDE Response: MDE does not agree with the comments to either delete or amend paragraphs (b) and (c) of B(10). The purpose of this regulation is to limit exposure to airborne emissions and to limit water infiltration. Coal combustion byproducts should not be stockpiled on site before placement, but should be placed and compacted upon arrival at a site. As requested by Constellation, paragraph (a) will be amended by adding the requested language to provide flexibility while retaining the requirement to control dust.

162. Anne Arundel County - B.(10)(d): "~~A water truck shall be available to add water at a site as needed for fugitive dust control.~~ WATER OR A CONDITIONING AGENT SHALL BE AVAILABLE AND APPLIED AS FREQUENTLY AS NECESSARY TO

CONTROL FUGITIVE DUST, TO COMPLY WITH THE REQUIREMENTS OF 26.11.06.03, AND TO PREVENT A CONDITION OF AIR POLLUTION."

Environment Maryland - B.(10)(d): This provision should be modified to read as follows: "Water or a conditioning agent shall be available and applied as frequently as necessary to control fugitive dust, to comply with air quality regulations, in particular COMAR 26.11.06.03. C. and D., and to prevent a condition of air pollution."

MDE Response: The proposed regulation at .03B(10) already provides for a water truck and provides the authority to require additional measures for dust control. Therefore, no change to the proposed regulation is needed in response to these comments.

163. Anne Arundel County - B.(12): "Coal combustion byproducts may not be placed within ~~200~~ 1000 feet of any lands not owned by the permittee."

Russell Dehart - The proposed regulations direct CCB disposal facilities to maintain a 200-foot setback from surrounding communities. This distance is insufficient, especially in light of current concerns expressed regarding air-borne fly ash. We strongly urge for the setback distance to be increased from 200 feet to 1,000 feet.

Constellation - B.(12) Coal combustion byproducts may not be placed within 100 [delete "200"] feet of any lands not owned by the permittee.

Comment: We suggest that this buffer zone be changed to 100 feet for consistency with surface mining regulations. This is appropriate for several reasons. First, the pollution control issues are addressed by other regulations. Second, the inconsistency between this regulation and the mining regulations would result in a narrow 100 foot strip of mined area requiring reclamation but also requiring different fill material. This would unnecessarily complicate site engineering and material management.

MDE Response: There is currently a minimum of 25 feet from property lines for the surface mine permit area. The 200-foot setback for the use of CCBs will not be inconsistent with other setback requirements dealing with mine site operations. Leachate collection and liners will provide adequate protection for adjacent groundwater. The Department believes that with new more restrictive controls, the 200-foot setback will be adequate. As with any other land use decision, counties could impose more restrictive setback requirements. No change to the proposed regulations is needed to address this comment.

164. Constellation - B.(13) – Change COMAR reference from "26.09.01" to "26.17.01"

MDE Response: MDE agrees with the comment and will amend the proposed regulation to make the requested change.

.04 Application for Use

165. Environment Maryland - In general terms, the coal combustion byproducts use permit should be subject to a public review and hearing process. Also, the Department should require a comprehensive operation and filling plan for this site to include but not be limited to the provision for design requirements and operating procedures for industrial waste landfills set out in COMAR 26.04.07.19.

MDE Response: MDE does not plan to issue a separate stand-alone permit for the use of CCBs at noncoal surface mines. The Department will authorize the use of CCBs via the existing Surface Mine Permit that will provide for public input and hearing process, require a reclamation plan based upon the requirements in Regulation .04, and require a liner and leachate collection system under Regulation .06 which requirements are similar to those for industrial waste landfills.

166. Environment Maryland - C.(3)(g): Change to "Existing *public and private water supply and monitoring* wells within 1,250 feet of the boundaries of the site."

MDE Response: The Department believes that the existing wording already includes public, private and monitoring wells. Therefore, no change is needed to the proposed regulations in response to this comment.

167. PPRP - C.(3)(g) makes reference to depicting "Existing wells within 1250 feet of the boundaries of the site," on a topographic map; however, no direct specification is made for a permissible minimal distance between a CCB fill location and a potable well.

MDE Response: The permit review process will include identifying existing wells within 1250 feet of the site. Groundwater flow direction will also be evaluated. It would be difficult to define a specific restriction to potable or water supply wells without knowing the site-specific groundwater and geologic information. The protection of potable water supplies will be a primary concern for any application proposing potential impacts. MDE believes that a decision based on an evaluation of site-specific geology and hydrogeology would be preferable to imposing a general setback from wells. Setbacks could be imposed based upon ground water flow direction and geologic features at individual sites. No change to the proposed regulations is needed to address this comment.

168. Anne Arundel County - C.(3): Add: "(k) LOCATIONS OF RESIDENCES ABUTTING THE SITE AND NAMES OF PROPERTY OWNERS."

Environment Maryland - C.(3)(k): Add a new provision: "Locations of residential properties adjacent and in close proximity to the site and names of property owners."

MDE Response: Section 15-822(b), Environment Article, and existing COMAR 26.21.01.03D(3) already require that a surface mining permit application shall include a topographic map which shall include the property lines and name of the landowner of the

affected area, and the names of the adjacent landowners, as well as the location of all buildings within 200 feet of the outer boundary of the affected land and the name and address of the owner and the use of each building. The provisions of the existing law and regulations are to be given effect in the proposed regulations under COMAR 26.21.04.03A(2) and 26.21.04.01C. No change is needed to the proposed regulations since these factors are already required to be provided by existing law and regulations.

169. Alpha Omega Environmental Management - C.(14)(e) – this is contradictory to Section .03B.(8) as proposed.

Environment Maryland - C.(14)(e) - This provision is in conflict with proposed 26.21.04.03.B. (8), which requires immediate placement of the coal combustion byproducts in compacted layers, and prohibits stockpiling of coal combustion byproducts.

MDE Response: MDE agrees with the comment and will amend the proposed regulations to delete 04.C(14)(e).

170. Rich & Henderson - C.(14)(e) - Proposed new language: Where and how coal combustion byproducts will be stored before placement*, if storage will be for longer than thirty (30) days*.

MDE Response: Previously addressed by the deletion of .04C(14)(e). Please see the response to Comment 169. MDE does not agree with this comment because CCBs may not be stockpiled at noncoal surface mines before placement.

.05 Initial and Ongoing Characterization

171. Constellation - B. We question whether the table under this regulation should reference “sulfur” rather than “sulfate.”

MDE Response: MDE concurs with this recommendation, and will amend the proposed regulation to replace “Sulfate” with “Total Sulfur” on the list of analytes for characterization. It should be noted that as sulphur and suphides oxidize to sulphates in the environment, sulphates is the appropriate analyte for water analyses**.**

172. Constellation - B. We suggest that the use of “pollutants” in this sampling context is not entirely accurate, as many are natural constituents. Therefore, the term “parameters” is recommended in this location and also in Regulation 26.21.04.07B(4).

Proposed change: The sampling plan shall include the following:
(1) A list of the *parameters* [delete: “pollutants”] to be analyzed and their detection limits (Practical Quantitation Limits PQL), which shall include, at a minimum, the following:

MDE Response: MDE agrees with the comment regarding the use of the word “parameters” and will amend the proposed regulation to change the language to be "a list of the parameters".

173. PPRP - C.: Add the phrase "or when required by subparagraph E which follows" to the end of the sentence to account for variable coal sources.
MDE Response: MDE does not agree with the comment because subparagraph E already provides that the material must be characterized in accordance with the sampling plan and the results submitted to the Department should there be a change in the raw materials.

174. Anne Arundel County - D.: "CERTIFIED ~~L~~ laboratory results…"

MDE Response: MDE does not agree with this comment. The State only certifies laboratories that conduct testing of drinking water, not water quality, wastewater or solids analyses.

.06 Leachate Control and Collection

175. Alpha Omega Environmental Management - A.(2)(b) – replace the requirements for synthetic liners from 50 mil to 40 mil and 30 mil to 20 mil. This should still achieve the required permeability while using more commercially available thicknesses.

MDE Response: MDE has extensive experience with the use and installation of synthetic liner materials, and believes that the proposed changes in thicknesses would not provide adequate protection. The 30 mil thickness was specifically chosen to allow the use of 36-mil Hypalon reinforced chlorinated polyethylene, which has been widely used in the industry. For unsupported geomembranes, 50 mil as a minimum was selected to allow the use of 60 mil high-density polyethylene (HDPE) liner materials, which have been widely used for years in hazardous waste, municipal and industrial landfills and are an industry standard. Therefore, MDE prefers the minimum liner standards specified. No change to the proposed regulations is needed to address this comment.

176. Environment Maryland - A.(2)(b) - The proposed prepared subbase should be an eighteen (18) inch clay liner or comparable industrial substitute with a permeability less than or equal to 1x10-7 centimeters/second.

MDE Response: MDE acknowledges that a subbase of lower permeability would perform better in the event of a leak in the primary liner; however, the specified permeability for the subbase proposed, $1x10^{-5}$ cm/sec, was chosen to provide parity between the mine reclamation requirements and the requirements for industrial solid waste landfills. The basic minimum liner design standards proposed have been shown to perform adequately over the last 20 years. Also, part of the purpose of the subbase is to provide structural support to the primary liner, which is often easier to achieve with stiffer materials such as a silt, as opposed to a fine clay. Therefore, no change to the proposed regulations is needed to address this comment.

177. PPRP - A.(2)(b) and (c): Add language to clarify the required permeability of "natural earthen materials".

MDE Response: Proposed COMAR 26.21.04.06A(2) provides that the subbase be composed of natural earthen materials, which MDE has historically interpreted to mean silts and clays that are installed and compacted in layers to provide a suitable support for the required geosynthetic materials that comprise the liner system. This regulation makes reference to the required permeability standard that is specified in .06A(2)(b) ("The subbase referenced below shall be composed of natural earthen materials…"). Taken together, this means that the subbase is composed of soils that are installed so that it has a permeability of less than $1x10^{-5}$ cm/sec. The availability of suitable material, and the procedures required for installing it, will be defined as part of the information submitted to support the application. Therefore, no change to the proposed regulations is needed to address this comment.

178. Alpha Omega Environmental Management - A.(2)(f) – The groundwater buffer requirement should refer to the "composite" liner system to avoid confusion. Also, the liner references throughout COMAR 26.21.04 should be for a composite liner system rather than individual components.

MDE Response: With respect to the comment suggesting the use of term "composite" to reflect the multilayered nature of the liner "sandwich" that is specified, MDE believes that COMAR 26.21.04.06A(2), and specifically 2(f), adequately specify that the liner system includes the subbase material. It is believed that readers of this regulation will not be reading individual requirements without reference to other pertinent requirements, e.g., someone reading COMAR 26.21.04.04C(18) that requires them to describe their proposed liner system will not feel free to propose just any liner system but will rather refer to the specific minimum requirements for liner systems that are provided in .06A(2). Therefore, no change to the proposed regulations is needed to address this comment.

179. **Constellation** - A.(2)(f) Located entirely above the composite high water table and bedrock, with a minimum buffer distance of 3 feet*, including the thickness of the prepared subbase, shall be required* between the bedrock elevation and the maximum expected ground water elevation. [delete "and the bottom of the liner system including the thickness of the prepared base."]

Comment: This distance between the liner can be consistent with solid waste regulation, 26.04.04.0712(b). In this proposed regulation, it appears that the bottom of the liner system would be construed as the bottom of the subbase, which would increase the separation from the groundwater by a couple of feet. The suggested edit corrects that error and is intended to reconcile the inconsistency that it creates with 26.21.03.B(6) (requiring 3 feet of separation between the regional groundwater table and coal combustion byproducts).

MDE Response: MDE has historically measured the buffer distance from the top of the groundwater or bedrock to the BOTTOM of the prepared subbase. MDE considers that a minimum vertical buffer between the liner and leachate collection systems of 3 feet above the maximum predicted groundwater elevations be maintained to ensure that the

structural and hydraulic integrity of the liner system is not degraded. Liners generally contain layered components of synthetics and various earthen materials, including the subbase, which is necessary to have certain engineering and hydraulic characteristics. Saturation of the earthen materials can change their response to loads, and can alter the coefficient of friction between layers. Therefore, maintaining the liner subbase layers in an unsaturated condition is generally considered to be a stability requirement. The buffer to bedrock is to ensure that compaction of the underlying geologic material due to the load that will be imposed by the overlying CCB materials does not cause undue strain on the liner and other geotechnical fabrics by providing a physical cushion to moderate stresses caused by differential settlement. No change to the proposed regulations is needed to address this comment.

180. CIBO (Council of Industrial Boiler Owners) - CIBO cautions that requiring mandatory liners for storage in all noncoal surface mines may be unjustified and inappropriate. Similarly, an unqualified requirement of alkalinity may not be appropriate. US EPA worked with the full range of stakeholders to develop and publish in 1999 a Guide for Industrial Waste Management (EPA Guide), which covers a full range of industrial wastes. That workgroup included many industries, utilities, waste management industries, environmental groups, States, and others. With respect to residual waste management, the EPA Guide provides specific guidance. It establishes objectives for environmental protection and provides a reasonable, risk-based, tiered approach to managing waste. It includes site-specific factors for determining whether or not liners are needed, a critical path decision that CIBO strongly advocates be part of any State program.

The EPA Guide recognizes that all industrial wastes are not the same and each type must be carefully characterized to determine appropriate handling methodologies. This concept of variability among wastes is further supported by the independent evaluation of the variation of CCB characteristics undertaken by the National Academy of Sciences (NAS) in its Report "Managing Coal Combustion Residues in Mines." (NAS Report).While the NAS Report focused on the practice of minefilling with CCW, the overarching issues of environmental impact are the same. CIBO suggests that MDE consider its contents in its consideration of the proposed regulations.

The mandatory use of liners in all noncoal surface mines is not called for based on data. Whether a liner is required should be based on the site characteristics and leaching characteristics of the CCBs. In many cases, the use of CCBs in selective non-coal mines is very similar to the use of CCBs in structural fills, which US EPA identified in its report to Congress as an acceptable use of CCBs. The NAS Report also did not reach the conclusion that liners were mandatory in all cases. The Report did recommend that the disposal of CCBs be subject to site-and material-specific performance standards, much as the Guide recommends.

An unqualified requirement that only alkaline CCBs may be used in coal mine applications is also too narrow to account for all circumstances. Generally, alkaline ash is neutralizing in coal mines, which are normally acid in pH. However, on occasion, mines

are alkaline, which would make this requirement unnecessarily restrictive. CIBO recommends MDEP provide a waiver for this and other requirements to account for this type of site-specific circumstance demonstrated through analysis.
Just as MDE requires TCLP analyses to dictate the management control strategies to be implemented for CCBs used in surface coal mining and reclamation operations in abandoned coal mines (See MD Regs., 25-26), CIBO recommends MDE adopt TCLP analyses for liner determinations in the context of noncoal surface mines.

It appears that some States have established criteria, for example, when TCLP results for CCBs are below drinking water standards by a certain factor (e.q., 10 times) then a liner may not be required and the CCBs may be used in a beneficial manner. Further, MDE has not made a comprehensive assessment of CCB sites with and without liners to determine impacts to the environment. Such an assessment would yield valuable data on which to base regulatory decisions.

The leaching characteristics of the CCBs should dictate the level of groundwater protection, the need for liners and the design of liners. The use of liners should not be a blanket requirement. Most states have utilized leaching tests to determine what level of ground water protection is required (liners, liner design or no-liners). In addition, this use of liners will require leachate treatment systems and the continued operations of these systems and related costs have not been identified or analyzed.

MDE Response: MDE has developed the regulations using data collected from various portions of the State. The coal fields of western Maryland tend to be on the acidic side and have benefited from the placement of ACCBs while the coastal plain areas are more acidic and porous. Past experience has shown that CCBs placed without liner or leachate collection have had detrimental effects on surrounding properties including water supplies. MDE believes that maximum protection to water supplies is of paramount importance and has therefore developed regulations that will require liners for all noncoal mine reclamation use. In coal mines, individual testing will be required to verify the ACCB use which may in some instances require alkaline addition beyond the minimum level set forth in the regulations. While MDE may require the use of TCLP to analyze leachate, a liner will still be required. No change to the proposed regulations is needed to address this comment.

181. Environment Maryland - A.(2)(c): This provision should set out procedures to measure and monitor leachate accumulation as well as requirements for regular leachate sample collection and analysis, with requirements for documentation and reporting. A new provision should be added for the requirement of an operation plan to be submitted to the Department for the leachate storage, transport and disposal.

MDE Response: MDE does not agree with this comment. The application process found in Regulation .04A requires that the permittee submit a comprehensive plan for the reclamation project, which shall include plans for the development and implementation of a leachate control and collection system. The operations plan provided for under Regulation .04A and C (17), (18), and (19), requires a discussion of how the leachate

shall be collected, removed from the site, and disposed of, as well as a detailed description of the leachate control and collection system. The monitoring requirements of Regulation .07 are, in part, intended to test whether pollutants from the CCBs have leached into the ground water. The proposed regulations are not designed to analyze the quality of the leachate but rather to protect the waters of the State such that the suggested leachate testing may not be as important as the required monitoring. Regulation .06B authorizes the Department to require whatever leachate control and collection requirements it considers necessary to protect public health and the environment. Therefore, no change to the proposed regulations is needed to address this comment.

.07 Monitoring

182. CIBO - .07A. The MDE Regulations require a person who proposes to use CCBs in reclamation of noncoal surface mines to submit a monitoring plan to the Department for review and approval. Both US EPA and US Department of Interior Office of Surface Mining have provided guidance to States regarding the need for monitoring, frequency, and other parameters. CIBO recommends that MDE's monitoring regulations leverage these already existing efforts. In addition, MDE should precisely identify the extent of monitoring it intends to require for approval of a monitoring plan and seek public comment on that proposal.

MDE Response: The parameters identified in the draft regulation were developed from Departmental monitoring parameters used for industrial wastes, including some that are good indicators for CCBs, and would serve as a minimum standard for the monitoring requirements for such sites. The particular monitoring requirements for any particular site can be modified through the submission of a monitoring plan, which would include justification for any requested changes. Applicants could propose alternative lists based on the specific materials they propose to use, and the manner in which they will be employed. The Department also reserves the right and has the authority to require additional parameters where warranted. The monitoring plan will be part of the permit application and will be open to public review and comment. Therefore, the Department acknowledges this comment, but no change is needed because the existing provisions of the proposed regulations address it.

183. Anne Arundel County - B.(2): "A schedule for the frequency of the analyses TO BE PERFORMED BY A CERTIFIED STATE LAB;"

Russell Dehart - The proposed regulations do not mandate the use of state-certified laboratories for sample analysis. To avoid any actual or apparent lack of impartiality on the part of testing facilities, we urge the State to require all testing be performed at state-certified laboratories.

MDE Response: Please see the response to Comment 129 concerning certification of labs.

184. **Environment Maryland** - B.: The monitoring plan should also include a requirement for monitoring and reporting of groundwater levels, as well as monitoring public drinking water well heads in the proximity to the site or whose source aquifer is below or near the site.

MDE Response: COMAR 26 21.04.07B(6) allows the Department to request any additional information applicable to a site, which could include reporting of groundwater levels if the Department determined that such information was required to be monitored. As for the monitoring of public drinking water well heads, this information is normally submitted as part of the drinking water regulations and does not need to be part of the CCB regulations, although under .07B(6), if the Department determined that such information was required, it could require the information to be submitted as part of the monitoring plan. No change is needed to the proposed regulations to address this comment.

185. Environment Maryland -C.(1): This provision should also require analyses and reporting of leachate quality.

C.(2) This provision should also require reporting of water level measurements from all monitoring wells, along with water table or potentiometric surface map, as appropriate, and hydrographs of all such wells.

MDE Response: MDE notes that the proposed regulations already provide the flexibility to require other information (See Regulation .07C(19)) and can therefore require the reporting of water level measurements as needed. Since the sites will be lined and provide leachate collection, water level measurements may not be as important. MDE believes that this section was intended for groundwater monitoring and not the quality of leachate which is covered under Section.06. No change is needed to the proposed regulations to address this comment.

186. Constellation - C.(3) Concerning the frequency of sampling set forth in proposed 26.21.04.07C(3), due to typically slow movement of groundwater, monthly sampling of a lined site should not be warranted.

Proposed change:
C.(3) Sampling shall occur *quarterly* [delete "monthly"] unless an alternative schedule is included in the approved monitoring plan.

MDE Response: MDE does not agree that the sampling frequency should be changed to quarterly from the proposed monthly frequency. Monthly sampling could provide more comprehensive data from the early stages and provide for early detection of any trends that may develop. The regulations provide that an alternative schedule could be included in the approved monitoring plan. No change is needed to the proposed regulations to address this comment.

187. Alpha Omega Environmental Management - C.(4) – remove this section completely. Should avoid using personnel requirements and use sampling requirements such as USEPA SW 846 no matter who conducts the sampling. At a minimum, define what constitutes a "qualified" groundwater scientist and environmental technician.

C.(8) – remove the phrase "for a qualified groundwater scientist or professional." This requirement and that noted in section C(4) are arbitrary.

C.(9) – define the phrase "qualified groundwater scientist or professional's" or remove the section entirely.

MDE Response: Due to experience with past problems in data quality caused by inadequately trained sampling personnel and data interpreters, MDE prefers to retain the ability to determine whether the individuals responsible for conducting and interpreting a monitoring program are qualified to perform this work. The same wording is used in federal regulations (e.g. 40 CFR 258). MDE believes that the intent of the wording is clear and that no regulatory definitions are needed. Therefore, no change is needed to the proposed regulations to respond to these comments.

188. Constellation - C.(7) - With respect to the proposed requirement to use a certified, independent laboratory, we believe that we should be able to use our lab if it is certified for water quality analysis by the Department of Health and Mental Hygiene or if it is otherwise acceptable to the Department to perform the analyses. The requirement for the lab to be "independent" is inconsistent with other MDE and Federal regulatory programs such as analytical requirements under the NPDES program. Our lab has a strong QA/QC program that is routinely audited internally by independent Company organizations and externally by State and Federal inspectors. Periodic quality control tests are used to confirm that our results on split samples are within acceptable analytical error of the results obtained by independent similarly certified laboratories. We should also have the latitude to perform additional sampling in other laboratory settings.

Proposed change:
C.(7) A permittee shall arrange for a qualified independent laboratory certified for *required* water quality analysis by the Department of Health and Mental Hygiene or which is otherwise acceptable to the Department to perform the analyses.

MDE Response: Regulation .07C(7) will be amended to remove the reference to certification of laboratories by the Department of Health and Mental Hygiene (DHMH). This is an obsolete reference, as DHMH no longer certifies water quality laboratories. Moreover, certification of the laboratories by the State is only for drinking water standards. The regulation provides that laboratories that are otherwise acceptable to the Department may be utilized. Therefore, no other change to the regulation is needed to address this comment.

189. Environment Maryland - C.(9): The laboratory data reporting should specifically require inclusion of all QA/QC documentation for the analyses conducted.

MDE Response: In MDE's experience, laboratory data reporting it receives typically includes QA/QC documentation and if not, MDE has the authority to require any additional information if necessary. Therefore, no change is needed to the proposed regulations in response to this comment.

190. Anne Arundel County - C.(10): "…Thereafter, if there is ~~a significant~~ ANY increase above a state or federal drinking water or groundwater quality standard, a permittee shall notify the Department..."

MDE Response: MDE does not agree with this comment. Sections C.(10), (11), and (12) must be read together. After reporting an exceedance, the permittee must resample, and if the exceedance continues beyond the thirty day resampling period, then the Department may require the permittee to submit a clean up and containment plan. The Department does not deem it necessary to be notified of "any" exceedance during this period, as suggested by the commentor, but should be notified only if there is a significant increase above an applicable water quality standard. Otherwise, the permittee might be required to continually report the exceedance until compliance with the standard is reached. Each sampling result will be considered individually by the Department and the results compared to previously collected and analyzed samples. Since the Department has the authority under (19) of this section to require other water monitoring and reporting requirements it deems necessary, the Department may establish in the monitoring plan or the permit what is considered to be a significant increase beyond the original sample. No change is needed to the proposed regulations to address this comment.

191. Constellation - C.(10) If analytical results from samples collected from any sources associated with a site or surrounding properties exceed a State or federal *primary* drinking water [Delete: "or groundwater quality"] standard for the first time, a permittee shall notify the Department within 24 hours of receipt of the analytical data detecting the occurrence. Thereafter, if there is a significant increase above a State or federal drinking water or groundwater quality standard, a permittee shall notify the Department within 24 hours of receipt of the analytical data detecting this occurrence.

Comment: Concerning 26.21.04.07C(10), we suggest that the 24-hour notification requirement should be confined to exceedances of primary drinking water standards. Under other reporting requirements, any exceedance of a secondary drinking water standard would be captured.

MDE Response: MDE does not agree with the comment to notify based upon only primary drinking water standards. Secondary drinking water standards and other ground water standards are important and may be leading indicators of problem trends that need to be addressed. No change to the proposed regulations is needed to address this comment.

192. Alpha Omega Environmental Management - C.(11) – remove the terms "immediately" and "as soon as possible." These are arbitrary terms that are not needed to accomplish the desired effect.

Constellation - C.(11) Upon detection of the exceedance of a State or federal drinking water or groundwater quality standard for the first time, a permittee shall [Delete: "immediately"] resample each monitoring point in which the standard was exceeded to verify the initial detection. This resampling shall occur as soon as possible, and no later than 30 days following notification of a permittee of the exceedance of the standard by the analytical laboratory performing the analysis of the sample which indicated the exceedance.

Comment: With respect to the timing of resampling, 26.21.04.07C(11) sets forth two different standards. We suggest deleting "immediately" and retaining the more thorough description of the sampling time frame as set forth in the next sentence.

Environment Maryland - C.(11): Considering that C (3) requires monthly sampling, the requirement here for resampling within 30 days following a water quality exceedence is ineffective. If a water quality exceedence is detected, confirmatory sampling should take place no later than 14 days from notification. If the exceedence persists, the permittee should be required to continue sampling at the greater frequency until the cause of the exceedence is found and remediated.

MDE Response: The intent of the regulation is that resampling take place immediately after notification of the exceedance. Recognizing that "immediate" resampling the same day or next day may be impossible, the words "as soon as possible" were included in the proposed regulation. This was not intended to mean, however, that resampling could wait for 30 days after notification of an exceedance because, as noted by some commentors, there is already a requirement for monthly sampling. Reading the regulation in a way that would allow "immediate" resampling to take place 30 days later would render the immediate resampling requirement ineffective.

The regulation is being amended to clarify the Department's intent. Language will be added to provide that if resampling cannot take place immediately, a permittee shall notify the Department of the circumstances that make immediate resampling impossible, and the Department may approve a longer period for the resampling, which shall be not later than 30 days following notification of the exceedance.

193. **Anne Arundel County** - C.(12): "If the exceedance continues beyond the 30 day resampling period, a permittee shall submit a noncompliance report to the Department within 5 days AND SHALL ISSUE A PUBLIC NOTICE AND NOTIFY THE LOCAL HEALTH DEPARTMENT."

MDE Response: MDE does not agree that a public notice is necessary in all cases of exceedance. Public notice of an exceedance may be required in certain cases and will be based upon individual site information and proximity to other properties and water

supplies. The Department recognizes the importance of notifying local health department of drinking water quality concerns and will amend the proposed regulation to require the permittee to provide notification under section .07C(12).

194. Constellation - C.(13) All data for each [delete: "monitoring"] well shall be summarized and presented in time series format. The data for each [delete: "monitoring"] well shall be presented ***in graph format***. [Delete: "on a chart so that the water quality data for each parameter for each well can be observed simultaneously."]

Comment: We appreciate the Department's concern for useful presentation of data, but urge the Department to avoid restricting the presentation in the manner suggested by 26.21.04.07C(13). Multiple graphs may be needed to describe data trends in the most usable form, because of the range of values for various constituents varies. For example, thallium is typically at levels in the 0.001 range, in contrast to chlorides, which are found in the 10s or 100s range. Putting these two constituents on the same graph may render the graph unreadable.

MDE Response: MDE acknowledges the suggestion that monitoring data may be presented in a variety of ways. The Department's geologists have indicated a preference for the presentation of the actual numeric data in a chart, generally consisting of a table for each well, with the monitoring parameters listed down the left side of the chart, the individual sampling dates listed in chronological order across the top, and the numeric analytical values comprising the body of the chart. In this way one can easily see the historic variability in any given parameter in a well over time by looking from left to right across the chart. An example of the format is:

Monitoring Well MW-12D

Sampling Date> Parameter V	MCL or standard	1/5/08	2/7/08	3/4/08	4/6/08
pH (pH units)	6.5-8.5	5.2	5.3	5.2	5.4
Specific Conductivity (*u*mhos/cm)	n/a	273	291	280	327
Iron , total (mg/l)	0.3	0.45	0.41	0.43	0.38
Sulphates (mg/l)	250	118	121	115	139

It should be noted that the regulations are intended to set a minimum standard, but unless they specifically restrict the content of a report, are not otherwise restrictive – in this case, while the proposed regulation requires that the data be presented in the time-series format, submitters are not limited to this, and may provide graphs and other means of presenting or analyzing the data as is appropriate. For example, graphs of the trends of specific parameters of concern, and Stiff diagrams or other means of interwell comparison of parameters can certainly be included. (Constellation seems to have

interpreted the term “chart” to mean a graph, which we agree would be difficult to present all data in a meaningful scale). Therefore, no change to the proposed regulations is needed to address this comment.

195. Alpha Omega Environmental Management - C.(17): Submit TCLP analyses on a graduated scale (semi-annual then annual then bi-annual) unless exceedances occur.

MDE Response: The Department does not agree with the comment to submit analyses on a graduated, less frequent scale. Monitoring data will be accumulated and show long-term trends, more frequent analysis may show negative long-term trends. The Department will still require quarterly reports and no change will be made to the proposed regulations.

196. Environment Maryland - C.(17): As discussed in the comment on COMAR 26.21.04.03.B. (3), a TCLP analysis is a poor indicator of the leaching potential for coal combustion byproducts. In addition to a TCLP analysis, total metals analyses of the coal combustion byproducts should be conducted. Throughout the project, leachate samples should be collected, analyzed, and documented as per the reporting requirements of this section.

MDE Response: MDE agrees that flexibility is desirable with respect to the type of testing required and will amend the regulation by adding “or other test approved by the Department.” This section is intended to address monitoring of groundwater, not the quality of leachate, and so collection, analysis and documentation of leachate is not considered necessary. See also the response to Comment 181 concerning leachate monitoring.

197. Anne Arundel County - D. Table 1: Add RADIONUCLEIDES

MDE Response: MDE agrees that monitoring for radionuclides may at times be appropriate, but due to the low mobility of radionuclides generally associated with CCBs compared to other indicator parameters such as sulphates, believes that it is not necessary to include these parameters for routine monitoring. The regulations as proposed already provide ample authority for MDE to require additional monitoring parameters including radionuclides if a release is detected or even suspected, and could be required, at the Department’s discretion, at any time. Therefore, no change to the proposed regulations is needed to address this comment.

198. Constellation - D. Within Table I, we note that the PQL lists in Table I for arsenic is 0.05 ppm which is above the MCL of 0.01. We wished to point this out, in case it is an error.

MDE Response: The commentor is correct. The proper current PQL for arsenic is 0.004 ppm. The proper PQL for selenium is 0.012 ppm. These amendments will be made to the proposed regulations.

.08 Closure

199. Alpha Omega Environmental Management - A.(2): Change the cap slope requirement to 3% to be consistent with other states.

MDE Response: The Department has required cap slopes to have a minimum 4% slope for industrial waste landfills since 1987. This minimum slope helps maintain positive drainage after post-closure settlement better than an initial slope of 3%, and was therefore chosen for inclusion in this part of the regulation. The Department does not see how consistency with the requirements of other states has any bearing on this issue, since each cap design must be based on the specific conditions and topography at the site to which it applies. Therefore, no change to the proposed regulations is needed to address this comment.

200. Environment Maryland - A.(2): The low permeability cap should have a minimum thickness of 40 mil. -- the proposed 20 mil. cap is too thin and can be punctured easily. The cap should be installed with a maximum slope of 1 to 3 percent, with a thorough analysis to demonstrate both global site stability and durability of cap materials.

MDE Response: Although MDE agrees that thicker plastic geomembranes are generally more durable than thinner ones, it is noted that this standard is derived from the closure requirements for landfills, and has functioned very well in the 20 years since it was introduced. It is noted that this is a minimum standard that must be met, and that the industry often self-prescribes more stringent geomembrane specifications for caps. No evidence was provided to suggest that 20-mil caps are inadequate, and in MDE's experience, no caps have been found to fail due to a 20-mil liner – only due to stability issues during construction. As 20-mil caps appear to provide adequate protection when otherwise properly designed (which includes quality assurance and control procedures to ensure that it is installed intact), no change to the proposed regulations is needed to address this comment.

With respect to the issue of slope, it is noted that the regulation proposed requires a minimum 4% slope – still quite flat, being a slope of only 4 feet of rise over a 100 foot distance - in order to ensure that the site drains adequately following settlement which is likely to occur for considerable time after closure, due to settlement of the material. This slight slope is not expected to present stability problems, although an engineering evaluation of stability is a necessary part of any closure design. The effective design limits for caps is generally around a 30% slope, depending on the materials specified, and is established by the coefficient of friction and other design features, as well as sediment and erosion control concerns. Having a slope less than 4%, except where other engineering provisions (e.g., an enhanced drainage layer or other factor) ameliorate the potential for water to accumulate on the cap, is considered to be less safe than the proposed regulation. Therefore, no change to the proposed regulations is needed to address this comment.

201. Environment Maryland - A.(4): Add the following text: "Cover shall be established and maintained to comply with air quality regulations, in particular COMAR 26.11.06.03. C. and D., and to prevent a condition of air pollution."

Anne Arundel County - A.(4) Soil Cover: Add at the end of the paragraph: "COVER SHALL BE ESTABLISHED AND MAINTAINED TO COMPLY WITH THE REQUIREMENTS OF 26.11.06.03 AND TO PREVENT A CONDITION OF AIR POLLUTION."

Environment Maryland - A.(5): Add the following text: "Between the time of placement of the final earthen cover and the time of placement of the stabilizing vegetation, steps must be taken to maintain compliance with air quality regulations, in particular COMAR 26.11.06.03. C., D., and to prevent a condition of air pollution."

Anne Arundel County - A.(5) Vegetative Stabilization: Add at the end of the paragraph: "BETWEEN THE TIME THAT THE FINAL EARTHEN COVER AND THE TIME WHEN THE AREA IS VEGATATIVELY STABILIZED, STEPS MUST BE TAKEN TO MAINTAIN COMPLIANCE WITH THE REQUIREMENTS OF 26.11.06.03 AND TO PREVENT A CONDITION OF AIR POLLUTION."

MDE Response: Regulation .03B(10) already requires that adequate measures be taken to minimize dust at a site and gives the Department the authority to require other measures it determines to be necessary to protect public health and the environment. Regulation .08B provides the Department the authority to require other closure requirements it considers necessary to protect public health and the environment. This includes the authority to require measures to minimize air quality impacts. COMAR 26.04.10.03B(3) also requires measures to prevent particulate matter from becoming airborne. Therefore, no change to the proposed regulations is needed in response to these comments.

.09 Post-Closure Monitoring and Maintenance

202. Alpha Omega Environmental Management - A. & F.(1) – suggest using a graduated scale for monitoring unless exceedances occur.

MDE Response: The Department does not agree with this comment. Regulation .07 provides for the requirement for a monitoring plan. Section B of that regulation provides for the frequency of the analysis and the frequency should be discussed within that plan. The Department, however, will require appropriate frequencies based upon site conditions up to final bond release. No change to the proposed regulations is needed to address this comment.

203. Anne Arundel County - F.(1): "A permittee shall conduct groundwater and surface water monitoring in accordance with the monitoring plan under Regulation .07 of this chapter for a period of at least ~~5~~ *30* years following closure of a site."

Russell DeHart - The proposed regulations include a post-closure monitoring plan that spans five years. Contamination of the water supply can occur due to many events that evolve with time, such as liner material failures due to movement of stress load associated with fill settling or the introduction of standing water due to shifting topology. The five-year period is especially inappropriate if these facilities are to be developed after closure. Construction activities that occur after closure will likely result in tears in a facility's cap and exposure of flyash to the elements. At the very least, development will assuredly cause the fill, and any liner, to experience stresses different from those at closure. Consequently, we strongly urge for the expansion of the post-closure monitoring period to 30 years.

MDE Response: The Department does not agree with the comment that the default period for post-closure monitoring be for a period of 30 years as it is inconsistent with the current post-closure period of five years established for industrial and other landfills that are not hazardous or municipal waste landfills (see Environment Article, Section 9-211, and COMAR 26.04.07.22). However, we do recognize that there may be cases where the Department considers that continued monitoring beyond five years after closure may be appropriate in order to assure the public health. Regulation .09F(2) provides the Department with authority to extend the post-closure monitoring period. The Department has exercised similar authority in the solid waste regulations to extend the monitoring provisions for rubble landfills, where the Department considered it appropriate, and this regulation would allow the Department to do the same thing at surface mines reclaimed using CCBs under this regulation. The particulars of the post-closure monitoring system will be included in the post-closure development plan submitted for each site as part of the mining application process. See proposed regulation COMAR 26.21.04.09G.

204. Alpha Omega Environmental Management - F.(2)(d) – replace "for other good cause" with "as deemed appropriate by the Department based upon data received." This is arbitrary and too open ended as written.

MDE Response: The Department does not agree with the change in F(2)(d) suggested by the commentor, because "good cause" will be determined by the Department so as to protect the public health and environment. No change is needed to the proposed regulations.

205. **Anne Arundel County -** G.: "If post-reclamation land use includes development of a site, the ~~permittee~~ PROPERTY OWNER shall submit…"

MDE Response: The Department recognizes that the permittee may not be the party that subsequently proposes to develop a closed CCB site, and that it may not in fact even be the property owner, but a prospective owner. However, the Department does not agree that a change to the proposed regulation is needed at this time, but will consider the matter for a possible future rulemaking.

206. Rich & Henderson - G. The operations plan and development guidelines being prepared pursuant to the Consent Decree [at the BBSS site] should satisfy this requirement.

Proposed Solution:
.09G. If post-reclamation land use includes development of a site, a permittee shall submit to the Department for review and approval an operations plan for disturbance of the closure cap and to verify the integrity of the liner and leachate collection system. *Sites that are under a Consent Decree or which have submitted to the Department Construction Guidelines for the development of land reclaimed with coal combustion byproducts are exempt from the requirements of 26.21.04.09(G).*

MDE Response: The Department does not agree with this comment. A consent decree does not preclude compliance with the proposed regulations. No change to the proposed regulations is needed to address this comment.

207. Alpha Omega Environmental Management - H. The bond release needs to have maximum time limits established as long as monitoring requirements are not being exceeded.

MDE Response: The Department does not agree that there should be maximum time limits for bond release. Bond release will be based upon individual site conditions and analysis and compliance with permit conditions. Based upon post-closure monitoring results, the Department may consider extending the time limits for bond release. See also the response to Comment 208.

208. Rich & Henderson - H. This provision provides no objective criteria for the Department, the permittee or the public in ascertaining whether "no offsite impacts will occur." For such a provision to work smoothly, it should include some benchmark referencing permit limits, indicator parameters or environmental quality standards.

Proposed Solution:
.09H. The Department may retain . . . until the Department is satisfied that no offsite impacts from the coal combustion byproducts will occur. *In making that determination the Department shall consider the monitoring and post-closure monitoring results reported by the permittee pursuant to regulations .07 and .09.*

MDE Response: The Department concurs with this suggestion and will amend the proposed regulation based on this comment to include the additional language.

209. Tim Berkoff - .09A-H. In the proposed regulations, 5 year term is noted for the post closure monitoring and maintenance of a site. Exposure or failure to maintain engineering controls is needed to prevent long term impacts, as failure to implement sound maintenance will result in eventual failure and contamination of the environment. Consequently, maintenance and monitoring must be adapted for a long-term plan that

runs with the land, with specific responsibilities to be conveyed forward to all future landowners for as long as the potential for an environmental hazard exists.

MDE Response: The Department intends to require maintenance and monitoring of the site for a minimum of 5 years after closure of the site and may extend that monitoring based upon results of the post-closure monitoring. For further clarification of post-mining land restrictions see the response to Comment 203.

.10 Drinking Water Supply

210. Alpha Omega Environmental Management - A. Define impact area or what constitutes an impact.

Mirant - The proposed regulation would require a permittee to take a series of action if a drinking water supply is "impacted" by an active operation using CCB for reclamation. The term "impacted" is not defined. We recommend that the trigger for action be when a drinking water supply is determined to exceed a primary or secondary drinking water standard and the CCB operation may reasonably be expected to be the source of contamination.

MDE Response: MDE will determine an impact area based upon results of any water quality sampling in wells or water supplies at a site or in an area that extends beyond the perimeter of a site. Therefore, a specific impact area would have to be designed relating to the circumstances of an individual event, based on a scientifically defensible interpretation of the geologic, hydrologic, and geochemical data available for the site. An impact would be determined based upon drinking water quality standards and/or other parameters relative to naturally occurring background data. As this determination would be based on the demonstrable scientific facts of the specific case, which can be variable, the Department will determine the impacted area at the time of the event and does not see a need to define the term "impact" for the purposes of this regulation. However, the regulation will be amended to remove the words "at a site" and by inserting "as determined by the Department."

211. Anne Arundel County - A: "Notify the Department within 24 hours of the NOTICE OF THE impact to the water supply…"

Add a new section D.: ISSUE A PUBLIC NOTICE AND NOTIFY THE LOCAL HEALTH DEPARTMENT.

MDE Response: MDE has determined that Regulation .10A will be deleted from the proposed regulations and therefore this comment is no longer applicable. Regulation .07C(10) already requires a permittee to notify the Department of an exceedance. MDE does not agree that a public notice is necessary in all cases of exceedance. Those cases which require public notification will be based upon individual site data and proximity to other properties and water supplies. Regulation .07C(12) will be amended to require

notification by the permittee to the local health department. See also the response to Comment 193.

212. Constellation - .10: Based upon monitoring data, if a drinking water supply *exceeds State or Federal primary drinking water standards due to coal combustion byproduct use* [delete: "is impacted"] at a site, during active operation or during postclosure up to the time of bond release, a permittee shall:

A. Notify the Department *in accordance with 26.21.04.07C(10) or within 24 hours of receiving and verifying the data*; [delete: "within 24 hours of the impact to the water supply, identifying the contaminants and contamination levels"].
B. Immediately provide a temporary potable water supply *to replace those supplies that exceed State or Federal primary drinking water standards until the permanent water supply is restored or replaced* [delete: "until a permanent replacement can be restored"]; and
C. *If necessary to achieve a safe water supply*, replace at no cost to affected property owners a permanent potable water supply that meets the minimum yield requirements established in COMAR 26.04.04.

Comment: We are concerned that the term "impact" is too vague. For instance, one could argue that an elevation in a parameter is an "impact" even if it would have no adverse health impact. Instead, the issue here should be whether or not the water supply meets primary drinking water standards. Furthermore, the suggested change to paragraph A is intended to cross-reference the pre-existing notification requirement under the monitoring section. It also provides for the possibility that data may be provided to permittee from an outside source. In the latter circumstance, the 24 hours would apply, but it should run from receipt and verification of data, since the source and quality of the data may be unknown.

MDE Response: Primary drinking water standards do not capture all parameters that may have an impact on safe drinking water and therefore, other standards may be considered in determining whether an impact has taken place. See the response to Comment 210 concerning the use of the term "impact".

Regulation .10A will be deleted and therefore this comment is no longer applicable.

The Department agrees with certain of the clarifying comments to the language in .10B. However, the Department does not agree to tie the requirement in this section to an exceedance of a State or Federal primary drinking water standard; rather the requirement will be based on whether a water supply is impacted as determined by the Department. The Department is also adding clarifying language that it may direct the provision of a temporary water supply.

The Department does not agree with the comment regarding .10C. A water supply replacement would be required if the Department determines that a drinking water supply is impacted.

213. Tim Berkoff - A-C: In this section, well owners within 300 feet of a contaminated well, drawing water from the same source, should also be provided with a temporary and eventual permanent, potable water supply regardless if the well can be proven to be "affected" or not. Experience at the Gambrills site has shown that contamination is highly variable over time and location, and proximity to subsurface contamination should be adequate to justify basic drinking water protections. Drinking water protection should also extend well beyond the proposed 5-year period after site closure.

MDE Response: The Regulation will be amended to clarify that the Department will determine what is an impacted drinking water supply, that off-site impacts will be considered, and that the Department will direct how and where a temporary water supply is provided. See the responses to Comments 210 and 212. The responsibility for monitoring and replacing or restoring a water supply will continue until the bond is released. The Department will not release the bond until there is a minimum of 5 years of compliant sampling analysis. The Department also has the authority to extend the bond for good cause. Therefore, no change to the proposed regulations is needed in response to this comment.

.12 Unauthorized Use of Coal Combustion Byproducts

214. **Constellation** - This provision creates an untenable compliance provision. For instance, the failure to file a report on time would subject the filer to solid waste permits that would be impossible to obtain. Likewise, if there were a monitoring, slope or other problems that could be remediated, in lieu of remediation to comply with the coal combustion byproducts standards, this provision places the activity under an entirely different set of standards, again with permitting that would likely be impossible to obtain. Consider the siting, County solid waste management planning, and other implications that would arise were a coal combustion byproducts activity suddenly to become an activity that required a solid waste permit.

To address this issue, we suggest deleting this provision, and applying normal statutory enforcement mechanisms. If MDE insists on retaining this provision, then it is strongly recommended that the provision be amended to allow for a compliance plan and coming into compliance with coal combustion byproducts regulations. For instance, the compliance plan language could be modeled on 26.03.03.05 (noise pollution). We note that this "impossibility" situation does arise in other waste regulation, but typically in a setting where the violations can be remedied. Otherwise, the violation requires complex consent decrees to avoid the impossibility issue.

Mirant - The proposed regulation would provide that any use of CCBs "that is not in compliance with the provisions of this chapter as determined by the Department is a disposal of solid waste and is subject to all applicable laws and regulations governing the disposal of a solid waste, including applicable permit requirements of the Department." This proposed language would create an impossible compliance standard. Any violation of the chapter, regardless of impact or whether the violation can be promptly and fully

remedied, would subject the regulated entity to solid waste regulations and permits, which would be impossible to obtain. We suggest that this proposed regulation be deleted.

MDE Response: Non-compliant use of CCBs at a surface mine site could be considered disposal and subject to the solid waste provisions. To address the comments, the regulations will be amended to provide that non-compliance "may be" a disposal of solid waste as determined by the Department and subject to solid waste laws. This change provides the Department flexibility to determine the seriousness and impact of the violation. The Department understands that a violator would be unable to immediately obtain a solid waste permit, but the Department could nonetheless take enforcement action pursuant to the solid waste laws if warranted.