

Rebecca J. Smith
Acting Director
Office of Standards, Regulations and Variances
Mine Safety and Health Administration
1100 Wilson Blvd.
Arlington, VA 22209-3939

RE: RIN: 1219-AB29

Comments on Proposed Rule: Diesel Particulate Matter Exposure of Underground
Metal and Nonmetal Mines 70 FR53279-53293 (September 7, 2005)

Dear Ms Smith:

The FMC Corporation welcomes this opportunity to comment on the proposed rule that would impose reduced elemental carbon (EC) particulate limits on underground metal and nonmetal mines.

FMC is committed to the protection of the workforce and the public from hazards related to diesel exhaust and from all other hazards as well. FMC is supportive of effective and scientifically sound regulations, but oppose regulations that are counterproductive and have no scientific or engineering basis.

FMC would like to make note of a fundamental flaw in the proposed rule. It is not a diesel particulate or diesel exhaust rule, but a rule that expressly proposes to limit elemental carbon (EC), a replacement for a limit on total carbon (TC). As stated for the record in previous Comments and Testimonies, there is no scientific or engineering support for the EC limits and reductions proposed by MSHA, and the TC limit MSHA is abandoning was never feasible or justified either.

MSHA also was required to determine if there was a relationship between DPM, EC and TC, to permit conversion of the exposure limits from TC to EC, and to review the limits for validity and feasibility. All of this work should have preceded the 2001 rule, if the mandates of the Mine Act and other laws had been followed. However, in agreeing to the interim, partial settlement, MARG agreed to work cooperatively with MSHA to achieve the goals of the settlement, but it retained its full rights to challenge both the 2001 rule, and the anticipated amendments, if the flaws in the rules were not cured. FMC, a MARG member company, believes that MSHA violated the interim partial settlement agreement and that the flaws in the regulations are compounded by the new MSHA proposal.

In reference to the comments of Dr. Jonathan Borak, Yale University Medical School, and his associates, dated February 6, 2006, that demonstrate: (1) the EC content of DPM is neither stable nor predictable and thus the proposed conversion of TC limits to EC limits are not feasible; (2) measurement of EC at the proposed levels is not accurate and the inherent inaccuracies are not accounted for by the MSHA "error factor;" (3) EC is not a constituent of diesel exhaust that is suspected of causing lung cancer, and the MSHA risk analysis of diesel exhaust is inapplicable to the proposed EC limits; (5) there is no National Institute of Standards "standard" for defining EC for analysis and measurement, thus accurate measurement is not feasible (e.g. there is no standard 12" ruler, or one gram weight or NIST silica sample); and (6) MSHA duplicate analysis of more than 600 EC samples ("punch to punch" comparisons of duplicate analysis for the same sample) show that the results are neither precise or reproducible, and that the errors are not accounted for by the

inadequate “error factor” used by MSHA. In prior comments, Dr. Borak and associates concluded that the diesel exhaust risk analysis conducted by MSHA did not meet basic minimum scientific standards and that there is no dose / response relationship that supports the proposed EC limits.

As shown below, there is overwhelming evidence in the rulemaking record to support Dr. Borak’s comments, including conclusions reached by MSHA itself. Prior attempts by MSHA federal register pronouncements to discredit the sound scientific analysis provided by Dr. Borak, using hypothetical statistical computer models, and misquoted scientific evidence, are addressed in his new comments and shown to be spurious.

FMC is hopeful that MSHA will correct its flawed rules, by deleting the 160 limit, rather than perpetuate their proven and admitted errors by adopting the new proposals which lack a valid health risk and engineering basis.

- MSHA data from more than 600 duplicate elemental carbon analytical results, from the same collection filters (analysis results for a “punch and re-punch” from the same filter), described in Dr. Borak’s comments, demonstrate an unacceptable level of measurement repeatability for measuring elemental carbon levels, rendering the proposed limits not feasible.
- The 2001 Final Rule predictions that the 160 TC and 400 TC limits were technically and economically feasible for compliance by the mining industry were proven wrong by actual events. FMC’s sampling demonstrates (not counting MSHA’s 31 Mine Study Samples) that 10% of our samples show results above the 308 $\mu\text{g}/\text{m}^3$ EC Interim Standard (ranging from 10% to 40% above) and 63% of our samples show results above the 160 $\mu\text{g}/\text{m}^3$ EC Proposed Final Standard (ranging from 10% to 250%). Of this latter sample population, 66% show results above the 160 $\mu\text{g}/\text{m}^3$ EC Proposed Final Standard (ranging from 10% to 40%) while using B-20 Bio-Diesel. These samples were analyzed using the NIOSH 5040 method and calculated using the “MSHA Sampling Method” to determine exposure, which does not take into account significant IH factors such as shift length over 480 minutes, average pump flow rates using pre-sample calibration and post-sample calibration figures, and other environmental factors such as temperature and pressure.
- The MSHA analysis of technical and economic feasibility used to support the 2001 and 2005 Final rules was simply wrong. They were based on another MSHA computer model (“The Estimator”) and suffered from the many faults described by our prior comments; particularly the engineering analysis provided by H. John Head. The same faulty evidence and hypothetical feasibility predictions underlie the new MSHA prediction that successive, yearly 50 microgram EC reductions are feasible between now and 2011. For FMC, this model did not take into account the use of small horsepower diesel engines. Since the Diesel Partnership was formed, there has been no scientific study on controls for these engines which make up the majority of FMC’s underground fleet. As noted in the Stillwater Study Reports, the small engines are not candidates for DPF’s.
- The Diesel Partnership looked primarily at larger engines because they typically run with the duty cycle needed for filter regeneration, and produce enough heat that will keep the filter from plugging.

- The best and latest available scientific evidence does not indicate that miners will suffer any risk of or impairment of health or functional capacity if regularly exposed to elemental carbon at the current limit of 308 micrograms per cubic meter. That level is about 1/7 of the MSHA 2 mg / m³ limit for coal dust, before any of the MSHA proposed reductions.

Pending the results of the NIOSH/NCI study, MSHA should not adopt any new standard.

A NIOSH / NCI study is currently underway that was designed to address the question of potential diesel health effects and safe levels of exposure. Any regulatory effort now to adopt a reduced EC limit is not in compliance with the law and the instructions of Congress.

FMC has willingly provided extensive sampling access and extensive records access for the on-going NIOSH / NCI study. FMC was selected as one of the study mines due to our mine age, number of years of dieselization in the mine, and history of a stable, long-term work force. This study should provide sound scientific based evidence to determine whether or not a rule is necessary. The NIOSH NCI Study is expected to be complete some time in 2006 - 2007. FMC strongly urges MSHA to wait for the study results before adopting any new standard.

As shown by the comments of Dr. Chase, contained in the rulemaking record, the first NIOSH / NCI preliminary data releases thankfully show no excess lung cancer found among the 14,000 studied miners. Dr Chase recited numerous qualifiers when he reached his preliminary conclusions, based on preliminary data, but the study continues to be “good news;” and certainly the 14,000 miners and FMC hope and pray that the final results confirm the interim, preliminary results.

The Proposed Regulations Are Not Feasible

Nothing can be more telling than MSHA’s own admission in the June 6 Federal Register notice at page 32916 (emphasis added):

MSHA acknowledges that the current DPM rulemaking record lacks sufficient feasibility documentation to justify lowering the DPM limits below 308EC ug/m³ at this time.

This admission is in addition to the other, critical MSHA admissions made in June and September, 2005, that it could not accurately and feasibly measure total carbon (70 FR 32867-32968) requiring a rule amendment to “convert” its limits to elemental carbon.

MSHA based its 2001 conclusion of feasibility of the 160 and 400 TC Limits upon predictions that retrofitting diesel equipment with exhaust filters would be the primary method of compliance. As documented by our prior comments, the use of the “Estimator” was based on invalid assumption of the availability of filters that would fit the entire varied fleet of equipment in use, and assumptions of perfect ventilation conditions throughout the industry. As established by MARG comments submitted by engineering expert H. John Head, no such filters were available commercially at the time of the MSHA prediction, nor when the 2001 Final Rule was published, nor had any undergone testing. Moreover, as Mr. Head established in his comments, perfect ventilation in mines did not exist in reality and the rule could not be declared feasible based on these incorrect assumptions.

When filter testing began following the 2001 rule, MSHA and the industry encountered significant problems and hazards.

1. Fire hazards with high temperature disposable diesel particulate filters (Program Information Bulletin No. P04-17)
2. Platinum based catalysts resulted in increased and hazardous nitrogen dioxide exposures (Program Information Bulletin No. P02-4)

See response to question 1 below for further discussion on filters.

After several years and multiple rounds of NIOSH Partnership testing of potential diesel exhaust controls at the Stillwater Mine, a mine with one of the most diverse fleets of diesel engines in the country, and extensive multimillion dollar exhaust control efforts by Stillwater (including major ventilation upgrades, massive equipment modifications, and improved maintenance practices), the mine cannot feasibly comply with the 400 TC (308 EC) interim standard, and can not foresee feasible compliance with any of the reduced limits MSHA proposes to become effective between now and 2011. The Stillwater testing and implementation of controls included every type of control available, including multiple filters and alternative fuels, and experimental controls. Similar documented results were reported during the public hearings by many other companies, and their employees who often testified independently or with their union representative to the extensive efforts by their employers to reduce exhaust level.

Specific MSHA Requests for Comment, 70 Fed. Reg. 53279-53293

Each numbered paragraph is extracted from the Notice of Proposed rulemaking. Where there are comments, they follow the question, in larger type and different font. Paragraph numbering tracks the Federal Register notice, but not all paragraphs contained specific requests, and as a result, there are gaps in the sequence.

IV. Technological Feasibility

A. Introduction

- 1. We seek additional information regarding technological difficulties and whether they will increase the cost to comply with the final concentration limit above that estimated in the 2001 final rule. We are particularly interested in whether mine operators have attempted to institute DPF systems that are impractical or have failed to work for their mining operations. We wish to know what types and sizes of DPFs have been evaluated, what types of equipment have been fitted with DPFs, what types of horsepower of engines were installed in the equipment, details concerning monitoring of equipment exhaust temperatures prior to specifying a DPF for a given application, whether DPF installations include a provision for backpressure monitoring, DPF maintenance intervals, DPF life, the results of any DPF failure mode analysis, DPM reductions obtained, and any other data related to in-mine experiences with DPFs on underground metal and nonmetal mining equipment.**

RESPONSE: Retrofitting diesel particulate filters onto the existing fleet of diesel equipment, originally anticipated as the primary control method to achieve the Interim and Final Limits, has proven difficult or impossible for a significant percentage of the diesel fleet. As a result, NIOSH has, and continues to conduct studies on control technologies. See comments of H. John Head regarding the latest NIOSH studies at the Stillwater Mine and their conclusion that a significant

percentage of the fleet cannot feasibly be retrofitted with control technology. FMC's fleet falls into the category that does not support DPF's due to duty-cycle and manufacturer specifications. To date, FMC has found only one filter manufacturer that is willing to try their disposable filters on our fleet. Specific challenges/concerns include flammability of disposable filters, low engine duty cycle, and Schedule 31 hurdles that have yet to be addressed.

2. We seek data on alternative fuel distribution systems.

RESPONSE: While alternate fuels offer exhaust reductions for some mines, they do not present a feasible means of compliance with the proposed rule because: (1) there is not a reliable supply and distribution system to service the industry, (2) the sole use of alternative fuels is not feasible because it poses transportation, storage, freezing and reheating problems and associated hazards; (3) the economic feasibility of alternative fuels depends upon uncertain government price supports that are due to expire in the near future; (4) as noted earlier, the use of bio-fuel has not indicated compliance with the 160 μ g/m³ proposed final rule, and (5) fuel prices will have a substantial impact as Bio-Fuel cost is over \$1.00 per gallon higher than Diesel.

3. We request comments on the percentage of diesel equipment, by mine size, in metal and nonmetal mines that currently have newer, low DPM emitting engines such as EPA Tier I and Tier 2 compliance engines.

RESPONSE: We do not have the requested information. We note, however, that there is no evidence in the record that replacing engines is feasible for existing equipment, nor that new engines, when available, achieve compliance with the proposed EC limits.

We are allowed to continue operating currently used diesel equipment and to replace, as well as repair, existing engines with the same type and model refurbished engine. In 2005, FMC replaced 5 pieces of equipment and plans on continuing a replacement schedule in the future. FMC's face equipment is electric and our diesel equipment is used for support and transportation, therefore our diesel engines do not accumulate many hours which means we will use equipment for many years prior to it needing a rebuild or total replacement.

4. Our 2001 cost estimates were based, in part, on the assumption that by the effective date of the final limit, 50% of the diesel equipment fleet would have new engines. We are interested in whether our 2001 assumption was accurate.

RESPONSE: Information submitted in the public hearings indicates that the MSHA assumptions were wrong. However, we are not aware of any compilation of data regarding engine purchases throughout the industry. During the Salt Lake City public hearing on this rulemaking, it was pointed out that the industry uses diesel equipment for many years and that repair of engines are much more common than replacements for these durable engines. FMC's replaces less than 2% of our fleet per year.

C. Remaining Technological Feasibility Issues

5. We request comments on whether compliance is technologically feasible by January 2006 and the appropriateness of a multi-year phase-in of the final limit.

RESPONSE: The 160 final limit should be withdrawn since it was not feasible by January, 2006 (nor will it be by the current published extension in May, 2006), nor by 2011, as assumed by the phase in proposal without any reliable and reproducible evidence to support the assumption.

FMC knows of no technology available for our operations to achieve compliance by January 2006. No data has been provided by MSHA, NIOSH or the Diesel Partnership on effective controls for small horsepower engines or for permissible equipment.

6. We also request comments and data on when the technology will be feasible.

RESPONSE: Predictions of the pace of future, feasible diesel exhaust technology, and EC or TC or exhaust reductions are highly complex and dependent on mine-specific conditions and equipment, and the availability of control technology applicable to the specific site, and the selection of scientifically supportable exhaust surrogates that can be feasibly measured to which applicable and feasible technology can be applied. It is futile to continue attempts to force reductions in emissions of EC or TC, when there is inadequate information on the potential health effects of the selected portion of the emission, and no valid way to measure the constituent or its relationship to the whole exhaust that is addressed by the standard. Repeated site-by-site experimentation of unproven and untested controls is a counterproductive use of resources and dangerous. Completion of NIOSH research and testing is far preferable and consistent with Mine Act mandates for standards to be based on research and demonstrations.

7. We also request comments on whether compliance difficulties may lead to another problem by requiring a large number of miners to wear respirators until feasible controls are fully implemented.

RESPONSE: FMC will have a very expensive problem should miners be forced to wear respiratory protection. The standard negative pressure ½ mask will not be a viable product for our miners, due to the irritation that is caused by contact of the ore with skin moisture. Requiring our miners to wear these respirators will drastically increase our dermatitis cases. This hindrance leaves us only one alternative. That alternative is the Powered Air Purifying Respirator. Many of these units would also have to be permissible, yet another issue. Cost of this protection raises from approximately \$28 for a negative pressure ½ mask to \$800 per respirator. Figuring our minimum number of miners that would require respirators would be 36 miners, our cost would be approximately \$28,800. This figure is very low due to the fact that we would also need to have a battery charging area, spare parts, and filters suitable to the contaminant. We could see that number increase to 150 miners needing respiratory protection, elevating the cost to \$120,000 (not including charging areas, spare parts, and filters). Also for consideration should be the issue of miners already having significant amount of objects on their waist, not including a battery pack / filter system of a PAPR. This does present a substantial added hazard to miners mounting and dismounting equipment.

The use of respirators on a wide spread basis will lead to not only a discontent workforce, but to difficulties in retaining employees and attracting new workers and add significant cost increases.

- 8. We are interested in public comment on how many miners would need to wear respirators to comply with the 2001 final limit and proposed multi-year phase-in of the final limit, and whether in each case they would need to wear respirators for their entire work shift, whether this amount of respirator usage is practical, and any other comments or observations concerning this issue.**

RESPONSE: The numbers of users are listed above (36 to 150 depending on levels within the mine). The miners would be required to wear the respirator for the entire shift and the change-out of respirator batteries and cartridges make the full shift use impractical unless mandated by MSHA.

C.1. Implementation of Available DPF's

- 9. We request information on the number of currently installed passive regeneration DPF filters.**

As stated previously, this technology is not available for our fleet. The passive system also poses serious questions on the requirements that we must meet for as a gassy mine. We have received no information from MSHA on what steps we will need to take should we install a passive system on a Schedule 31 unit.

- 10. We are interested in the methods used by the industry to match a passive regeneration DPF to a machine.**

As stated previously, this technology is not available for our diesel engines and poses issues with the potential for fires and permissibility requirements.

- 11. We are aware that two identical machines operating in two different mines may not both be able to use passive regeneration. We would be interested in comments about practical experience with these implementation issues.**

This implementation issue is even deeper for FMC. We have two identical machines in the mine that we can't use a passive unit on both. If the systems worked for our low duty cycle, our outby equipment could utilize them, but our permissible equipment could not due to the elevated exhaust temperatures. Secondly, on our schedule 31 equipment, there is little to no room for an installation within the frame of the equipment.

- 12. We request that commenters submit information from the mines that are utilizing active regeneration including data regarding the benefits and the practicability of active regenerating filters.**

As stated previously, this technology is not available for most of our fleet. Secondly, with the high potential of burn through, this technology increases overall life threatening risk in a gassy mine.

As a general comment we note the concerns identified by the Partnership tests at Stillwater about: the infeasible logistics of creating regeneration stations in narrow underground tunnels; the potential ground control hazards of widening exiting openings; the infeasible logistics of moving a large fleet of equipment (and personnel) to regeneration stations at the start of , during or at the end of a shift; and the lack of space for installation to install active (and inactive) filter systems for a large percentage of the fleet.

13. We seek further comment regarding these technological implementation issues as they affect feasibility of compliance with the final concentration limit including the practicality of available DPM control technology.

FMC knows of no viable, technologically feasible control for DPM for the majority of our fleet. We have used Bio-Diesel and still show limited success in meeting the proposed final rule, based on internal sample results. Other implementation issues of an active filtration system will be use of ovens underground to burn off soot. This practice in a gassy mine poses serious risk to all underground miners should there be an ignition of methane gas. These stations would have to be spread throughout the mine, increasing ventilation costs to provide a separate air split for the stations. There is also concern of utilizing paper filters on permissible equipment because of risk of fire, which MSHA published in a Program Information Bulletin. Another significant concern is the increase of nanometer sized particles that have been shown through NIOSH testing to increase during the use of filter technology. The Agency has not assured industry that utilization of filtration devices in and of itself is not increasing a hazard to our miners. Given the fact that smaller particles deposit deeper in the lung, further study work should be considered prior to supporting any filtration devices to adequately determine risk potential. Again, rule described as technology forcing may be forcing greater health risks onto our nation's miners.

14. We request that the mining community specifically address issues surrounding off-board regeneration; back pressure build up; frequency of the necessity to clean DPFs; the difficulty of placement of regeneration stations; and information on the extent to which diesel powered equipment accommodates a retrofit of the DPF.

As stated previously, this technology is not available for out diesel engines and poses issues with the potential for fires and Permissibility. As for the issue of placement, it will be costly and require additional engineering to create any station for placement of regeneration stations and will limit our ability to expand the mining activities and engineer appropriate ventilation schemes for the regeneration stations. Retrofitting of existing equipment will be costly as some of our equipment is 30+ years old. It is difficult to speculate on the accommodation of the DPF's since they are not readily available for our equipment and MSHA has delivered no guidance in making a determination for permissible equipment applications for gassy mines.

C.2. Benefits of On-Board Regeneration

15. We request comments from the mining community regarding the foreseeable utility of these and other new control technologies for reducing DPM levels in underground metal and nonmetal mines. (Referencing: a. ArvinMeritor [supreg] System; b. Johnson Matthey's CRT[supereg] System)

Please note above comments for Active System applications for FMC and please also refer to the comments of H. John Head, and other individual responses of MARG Member Companies, including Stillwater, for these mine specific and experiment specific questions, and our above stated concerns that MSHA has not collected industry wide information available to the agency to conduct its mandated analysis of the regulatory proposal. Neither of these units have been proved to be effective and have not been made available for permissible equipment.

C.3. Operators' Limited Access to Alternative Fuels and Ultra Low-Sulphur Fuels

C.3.a. Water Emulsion Fuels

16 We request any information that would help a mine operator determine if certain machines in a fleet cannot run efficiently on this type of fuel.

At the time of writing, Southwest Wyoming is not expected to have ULS fuel available until at least October, 2006. This seriously hinders any potential progress for this type of fuel during this year. Again, this region is not a major hub for other bio-fuels and any fuels we would consider would have to be trucked to our site. The Bio-Diesel use that has occurred at FMC has been used in only a limited number of our fleet and we have not noted any adverse affects on the engines. We would also request that the Agency refer to the comments of H. John Head, and the individual responses of MARG Member Companies, including Stillwater, for these mine specific and experiment specific questions, and our above stated concerns that MSHA has not collected industry wide information available to the agency to conduct its mandated analysis of the regulatory proposal. We note, however, that mine operator testimony reported a lack of feasibility due to a reduction in the horsepower of equipment needed for high horsepower tasks.

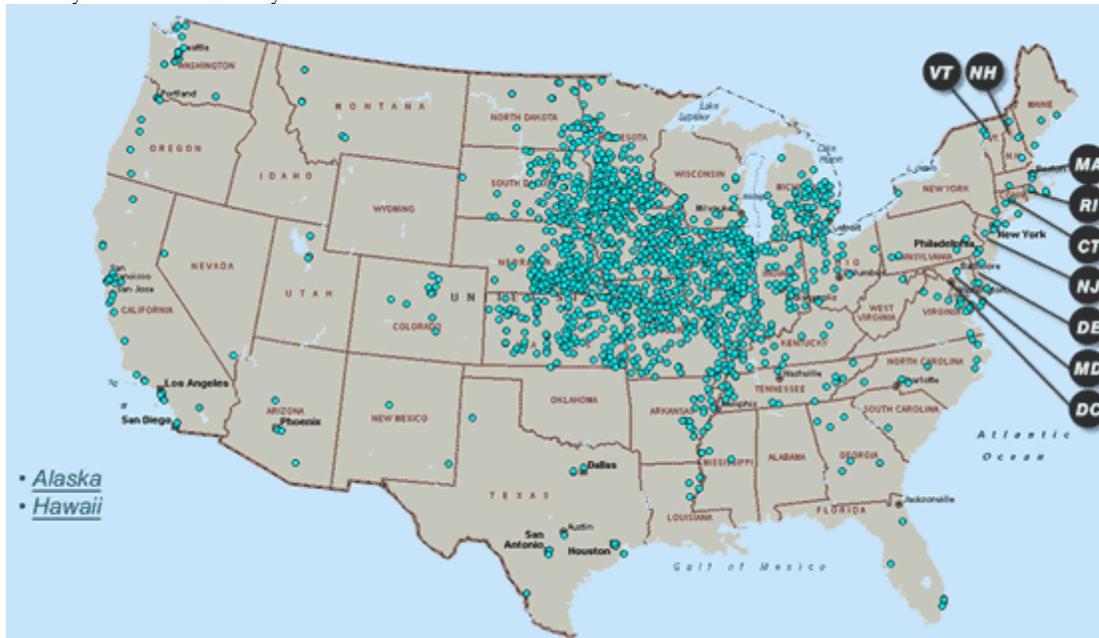
17. We request comments on the mining industry's experience with using water emulsion fuels to reduce DPM exposures.

Please see the comments of H. John Head, and the individual responses of MARG Member Companies, including Stillwater, for these mine specific and experiment specific questions, and our above stated concerns that MSHA has not collected industry wide information available to the agency to conduct its mandated analysis of the regulatory proposal. We note, however, that mine operator testimony reported a lack of feasibility due to a reduction in the horsepower of equipment needed for high horsepower tasks.

C.3.b. Bio-Diesel Fuels

18. We request comments on the mining industry's experience with using bio-diesel fuels to reduce DPM exposures.

RESPONSE: While the use of biodiesel shows some promise in reducing EC, biodiesel is not widely distributed nor accessible at a reasonable cost (an additional \$1/gallon in our case. The map below is from the website of the National Biodiesel Board (www.biodiesel.org) and shows that there is very little availability of biodiesel in the Western United States where we are located.



C.4. Installation of Environmental Cabs

- 19. We request comments on the mining industry's experience with using environmental cabs to reduce DPM exposures.**

RESPONSE: Environmental cabs, while they may be effective in reducing exposures to a single individual while he or she is using the equipment, are not feasible for the overall reduction of exposure of all miners to the proposed PEL or phase in of the PEL. The cabs will not be effective in protecting the miners due to the large amount of air movement carrying potential contaminants to unprotected miners. Environmental cabs are also not feasible at FMC due to height limitations and would require a change in mining method after 30+ years which would be cost prohibitive.

V. Complexity of Developing an Appropriate Conversion Factor for the Final Concentration Limit

- 20. We welcome comments regarding the types of data we should request from NIOSH to assist us in developing an appropriate conversion factor for converting the TC limits of this proposed rule to EC limits.**

RESPONSE: FMC respectfully suggests that MSHA wait for the NIOSH NCI study report to be issued so that NIOSH can share their scientific determination of the potential risks and feasibility related to DPM. At this time we believe that there is no reliable, accurate conversion factor, and neither the measurements nor the conversion are feasible.

- 21. We are interested in receiving comments on whether the record supports an EC PEL without regard to any conversion factor, the appropriate conversion factor if one is used, and any other scientific approaches for converting the existing TC limit to an appropriate EC limit.**

RESPONSE: FMC respectfully suggests that MSHA wait for the NIOSH report to be issued so that NIOSH can share their scientific determination of the potential risks and feasibility related to DPM. At this time we believe that there is no reliable, accurate conversion factor, and neither the measurements nor the conversion are feasible.

- 22. We are considering using the current 1.3 conversion factor to convert the phased-in final TC limits to EC equivalents. We would use the EC equivalents as a check to validate that an overexposure is not the result of interferences. We are interested in receiving comments on this approach to enforcement of the 2007 PEL, assuming the conversion factor rulemaking is not completed before January 20, 2007.**

RESPONSE: It is impossible to convert TC to EC with any degree of reliability and accuracy, and neither represents diesel exhaust or DPM, in a reliable, accurate and feasible manner. This conclusion is reached when the science and sampling and collection data base for TC and EC is examined from the various perspectives needed to promulgate a feasible and supportable standard: the collection and measurement perspective, the risk analysis perspective, and the feasibility perspective.

Neither measurement has a “standard” issued by the National Institute of Standards by which to judge accuracy, and both measurements are subject to such high errors and wide variability in results that neither is precise, repeatable nor feasible. As Dr. Borak concluded, MSHA has selected the wrong exposure matrix for its intended purpose of regulating diesel exhaust or DPM.

VI. Economic Feasibility

- 23. We request comments on the economic feasibility of the final concentration limit of 160TC micrograms and implications of the proposed phase-in approach on the economic feasibility.**

RESPONSE: It is economically not feasible to comply with a standard that is not technically feasible of compliance. It is difficult to say if the cost of compliance would be feasible for FMC due to the fact that the technology to reduce emissions has not proven to be available.

VII. Section 101(a)(9) of the Mine Act

- 24. We request comments on whether a five-year phase-in period for lowering the final concentration limit to 160TC $\mu\text{g}/\text{m}^3$ complies with Section 101(a)(9) of the Mine Act.**

RESPONSE: FMC does not believe that the phase in schedule is feasible nor appropriate based on the unproven hazard.

The discussion above, of filter failures, fire hazards, and increases in hazardous gases that resulted from control experiments, even under the watchful eye of NIOSH, indicates that implementation of the 160 limit would result in wide spread experimentation, with unproven and untested control technology, that presents new and potentially significant risks to miners.

VIII. Section-by-Section Discussion of the Proposed Rule

VIII.A Section 57.5060(b)

- 25. MSHA is interested in whether the mining community believes at this time that a reduction, after that (January 20, 2007) date, of the PEL equivalent by 50TC $[\mu\text{g}/\text{m}^3]$ each year from 400TC $[\mu\text{g}/\text{m}^3]$, is feasible and will provide additional time for the implementation of controls and development of distribution systems for alternative fuels.**

SEE RESPONSES ABOVE. Due to the lack of currently available control technology, we feel that the regulation should be withdrawn.

- 26. We also request information and comments on mining industry current experiences with feasibility of compliance with a limit lower than the current interim PEL of 308 $[\mu\text{g}/\text{m}^3]$ of elemental carbon (EC).**

SEE RESPONSES ABOVE. Due to the lack of currently available control technology, we feel that the regulation should be withdrawn.

- 27. We request comments on whether five years is the correct timeframe for reducing miners' exposures to the 160 micrograms of TC as originally established in the 2001 standard and to have been effective in January 2006.**

SEE RESPONSES ABOVE. Due to the lack of currently available control technology, we feel that the regulation should be withdrawn.

We request information on whether the proposed annual 50 microgram reductions of the final DPM limit are appropriate or, in the alternative, should the final rule include an approach such as one or two reductions.

SEE RESPONSES ABOVE. Due to the lack of currently available control technology, we feel that the regulation should be withdrawn.

- 28. We request your comments on the impact of granting extensions for compliance with the exposure limits that are greater than the 160 TC final limit.**

RESPONSE: The availability and grant of repeat extensions might be a feasible means of applying the 308 EC limit, if it is not overturned by the Courts, for those mines that can not feasibly comply. However, the extension process is not a feasible means of salvaging the infeasible 160 PEL, or the unworkable and unsupported yearly "phase in" proposal.

We suggest that extensions for the 308 PEL be available on a mine wide or section basis, for 5-year time frames, since technology generally does not make major leaps each year, and experiments with controls is safer and more effective if centralized under the NIOSH partnership organization than conducted haphazardly mine by mine. Moreover, the experience gained under the Petition for Modification process demonstrates that requests for extensions, like PFMs, are likely to take many months and perhaps years for MSHA to investigate and approve. Thus, the one year, renewable extension process is not likely to provide timely relief for the mines that can not feasibly comply with the 308 EC Limit, for many years in the future.

VIII.B. Effect of Eliminating Sec. 57.5060(c)(3)(i)

- 29. We request comments on the benefits of current Sec. 57.5060(c)(3)(i), and the effects of deleting the requirement, along with the number of miners that would be affected if Sec. 57.5060(c)(3)(i) were eliminated.**

RESPONSE: As MSHA points out in the Federal Register notice, there is no reason to retain the rule that special extensions should be limited to those who were operating diesel equipment prior to the arbitrary date of October 29, 1998.

- 30. We also request comments on whether the elimination of Sec. 57.5060(c)(3)(i) would result in a reduction in the current level of health protection afforded to miners.**

RESPONSE: For the reasons set forth above, there would be no reduction in the level of health protection from a standard that is not feasible, nor for which health risks do not exist above the standard.

IX. Medical Evaluation and Transfer

- 31. We are interested in comments from the mining community on whether we should include in the final rule, pursuant to Section 101(a)(7) of the Mine Act, a provision requiring a**

medical evaluation to determine a miner's ability to use a respirator before the miner is fit tested or required to work in an area of the mine where respiratory protection must be used under the final limits.

RESPONSE: FMC opposes a provision for respirator mandates in the diesel exposure rule, since there are existing respirator standards and the issues raised are generic to all respirator uses, complex and require a separate and complete rulemaking meeting all MSHA statutory mandates. Such a rulemaking proceeding has not been initiated here and the necessary analysis and findings by MSHA have not been made. In fact, MSHA has not even collected the data available to it to determine how many miners such a rule would require receive evaluation for respirator use.

Previously, the MARG group raised the problem of the MSHA rule being enforced with an unrepresentative single sample and suggests that such a result should not be permitted to adversely impact miners and mine operators. Instead, if MSHA promulgates such a rule, which FMC opposes, we suggest that at a minimum MSHA use the average of three samples to demonstrate overexposure for more than one month in any year to trigger respirator mandates for this rule. Moreover, when MSHA makes a determination that PPE should be made available as the result of diesel exhaust exposure, MSHA should issue a written Notice and Finding issued to the Mine Operator, reviewable by the Federal Mine Safety and Health Review Commission.

32. **We are seeking comments on whether the final rule should contain a requirement for transfer of a miner to an area of the mine where respiratory protection is not required if a medical professional has determined in the medical evaluation that the miner is unable to wear a respirator for medical reasons.**

RESPONSE: If respirator rules are adopted in the diesel exhaust rule, which FMC opposes, current regulations should be amended so that the Mine Operator can rotate personnel to reduce individual exposures, and reduce the time that any particular miner must wear PPE, or prevent the need for any particular miner to wear PPE. Such a result is consistent with Dr Borak's finding that the MSHA rules address the wrong exposure matrix from a health perspective, and would help prevent the risks and discomfort that respirators pose.

33. **We are interested in whether the public believes that we should amend the existing respiratory protection requirement at Sec. 57.5060(d) by adding new paragraphs (d)(3) and (d)(4) that would address medical evaluation and transfer rights for miners.**

MSHA should not issue any regulations dealing with employee transfers or pay issues since those matters are generic to any respirator use, and require extensive analysis of scientific support, risks, benefits, and feasibility, before adoption.

We particularly want to know if the final rule should include the following language.

- (3) **The mine operator must provide a medical evaluation, at no cost to the miner, to determine the miner's ability to use a respirator before the miner is fit tested or required to use the respirator to work at the mine.**
- (4) **Upon notification from the medical professional that a miner's medical examination shows evidence that the miner is unable to wear a respirator, the miner must be transferred to work in an existing position in an area of the same mine where respiratory protection is not required.**

- (i) **The miner must continue to receive compensation at no less than the regular rate of pay in the classification held by that miner immediately prior to the transfer.**
- (ii) **The miner must receive wage increases based upon the new work classification.**

MSHA should not issue any regulations dealing with employee transfers or pay issues since those matters are generic to any respirator use, and require extensive analysis of scientific support, risks, benefits, and feasibility, before adoption.

- 34. We also solicit comments from the public as to whether a transfer provision in the final rule should address issues of notification to the District Manager of the health professional's evaluation and the fact that a miner will be transferred; the appropriate timeframe within which the transfer must be made; whether a record of the medical evaluation conducted for each miner should be maintained along with the correct retention period; medical confidentiality; and any other relevant issues such as costs to mine operators for implementing a rule requiring medical evaluations and transfer of miners.**

RESPONSE: MSHA should not issue any regulations dealing with employee transfers or pay issues since those matters are generic to any respirator use, and require extensive analysis of scientific support, risks, benefits, and feasibility, before adoption. There should be no required notification to the District Manager for anything related to the diesel rules since such notifications would not serve the interests of safety and health and could run afoul of various state and federal privacy laws regarding health records.

X. Regulatory Impact Analysis

B. Costs

- 35. We solicit public comment concerning the cost of compliance, including any changes in cost that may have occurred since the 2001 REA.**

RESPONSE: See earlier discussion on economic feasibility.

MSHA has not supported its conclusion that a PEL of 308 micrograms per cubic meter of air (308_{EC} µg/m³) is economically feasible for the M/NM mining industry, let alone its necessary finding of economic feasibility for the 160 Limit. MSHA's prior economic feasibility conclusion is based on improper sampling and analysis, inaccurate and incomplete data, and incorrect assumptions. For these reasons, and as more fully explained elsewhere in these comments, MSHA's stated economic feasibility conclusion does not meet the mandates of the Mine Act nor the "reproducibility" standard of the Data Quality Act. *See* 67 Fed. Reg. at 378; DOL Guidelines, Appendix I at ¶ 10 (reproducibility standard requires an agency to ensure that information disseminated by it is sufficiently transparent in terms of data and methods of analysis that would be feasible for replication).

MSHA's conclusions regarding the economic feasibility of the 308 and 160 PELs are not based on a representative sampling of all the underground mines affected by this rule. The underground mines impacted by the standard are composed of 24 different major commodities, each of which must be examined from the unique perspective of the market for its products, its existing margins, national and foreign competition, and product commodity market prices. For example, the underground mines in Missouri that produce lead, the underground mines in Montana that produce platinum, and

the underground mines in Nevada that produce gold, are each economically viable only when viewed in light of the international price for their commodities, not their gross sales as used by MSHA to determine feasibility.

MSHA's economic feasibility analysis incorrectly assumed that none of the 31 mines in the study would need any major changes to its ventilation system. Moreover, only six of the 31 mines in the 31-Mine Study were allocated any funding by MSHA's analysis for minor ventilation upgrades such as auxiliary fans and ducting, for a total capital cost of \$234,000. In contrast to MSHA's findings, one mine alone in the 31-Mine Study estimates at least \$4.4 million in ventilation changes to achieve compliance. MSHA relies on its erroneous limited ventilation system assumption despite contradictory conclusions by MSHA itself, and NIOSH that mine ventilation systems throughout the industry need substantial upgrades to comply with the EC limits.

C. Benefits

- 36. You are encouraged to submit additional evidence of new scientific data related to the health risk to underground metal and nonmetal miners from exposure to DPM.**

RESPONSE: See discussion above and Dr Borak's comments

XI. Regulatory Flexibility Act Certification

- 37. We solicit public comment concerning the accuracy of these cost estimates. (Data from 2001 showing cost savings)**

RESPONSE: See discussion above and comments by H. John Head and MARG members.

XIII. Other Regulatory Considerations

XIII.A. National Environmental Policy Act of 1969

- 38. The rule would have no significant impact on the human environment. We solicit public comment concerning the accuracy and completeness of this environmental assessment.**

See Comments provided by MARG.