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Mr. Mike Pool  
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**Re Critical Commentary on CCMA Closure.**

Dear Mr. Pool,

On behalf of the BlueRibbon Coalition (BRC) I am providing further expert opinion regarding the correctness of the closure of the CCMA. This additional report is prompted by several recent events, including the updating of my detailed study of possible asbestos-related disease in CCMA human populations, as well as statements made by Field Office Manager Rick Cooper to the RAC in late January apparently suggesting that BLM still lacks meaningful data on potential human health issues and continues to defer to EPA findings on this subject. I remind you that myself and several others have provided such information. See, e.g., Ilgren to Pogacnik, 16 Apr 08; Ilgren to BLM 20 June 08; Iddings & Fowkes, 2008; Amador to BLM Hollister 19 June 08; Turke to BLM Hollister 20 June 08; and various public scoping meeting documents. I wish to summarize and elaborate here, and trust that BLM will respond appropriately in your upcoming RMP / DEIS, which we understand is now slated for an April, 2009 release.

I will restate my primary conclusion once again - there is no health related basis for the CCMA closure. I say this on the basis of my discussions with you and your colleagues last April, my 20 year study of the CCMA and extensive publications of this area; my final evaluation of the health of the Coalinga chrysotile miner and millers now in press (20 Feb 09); my review of the EPA May 2008 report and the voluminous detailed data set underlying this report obtained through FOIA's to EPA IX provided in four CDs and a fifth CD related to the same data as well as additional related unreported CCMA studies done in 2007 and 2008; the original EPA 2004 - 2005 CCMA ABS studies and attendant correspondence regarding same; the two earlier ABS CCMA studies done by the University of California at Berkley group in between 1977 and 1983 [Cooper et al, 1979; Poppendorf and Wenk, 1984] and the BLM between 1988 and 1991 [PTI 1992]; a phase 1 geological and historical archaeology reconnaissance study of routes R1 and R2 within the CCMA and adjacent areas (20 June 08) by Iddings and Fowkes; a recent EPA IX document ("Framework for evaluating asbestos sites" - USEPA / OSWER Asbestos Technical Review Work group, Arnold Den); an extensive literature review regarding the geological, mineralogical, industrial historical characteristics of the CCMA, I believe there is no health related basis for the CCMA closure. The individuals recreating on the CCMA are not at risk of attributable asbestos related

disease. There is no basis for the EPA's 'extreme concern' for such people or any others exposed to Coalinga asbestos on and / or near the CCMA. The salient points supporting this opinion include, though are not necessarily limited to, the following:

1. Over two million individuals have recreated on the CCMA over the last fifty years and there is no evidence of attributable asbestos disease particularly a mesothelioma excess due to such exposures.
2. Thousands of men have incurred occupational exposures to asbestos whilst working on the CCMA and there is no evidence of attributable asbestos disease particularly a mesothelioma excess due to such exposures - which would have been in many instances exponentially higher than those recreating on the CCMA.
3. There is no evidence of attributable asbestos disease in the families of such workers show particularly a mesothelioma excess due to such exposures.
4. There is no evidence of attributable asbestos disease particularly a mesothelioma excess in individuals residing in and thus potentially incurring 'environmental' exposures near the CCMA due to such exposures.
5. The 2008 EPA CCMA ABS cancer risk estimates regarding recreational activity on the CCMA are totally ludicrous positing up to 1/100 cancers when no attributable cases have been identified in any exposed groups.
6. There is no evidence of naturally occurring 'amphibole asbestos' i.e. asbestiform amphibole in the CCMA. Thus
  - a. Detailed review of the data set underlying the EPA May 2008 report, indicates the majority of the amphibole structures were nonasbestiform on the basis of aspect ratio distribution.
  - b. Detailed review of the data set underlying the EPA May 2008 report indicates problems related to misidentification of amphibole structures including though not limited to a lack of quality control
  - c. Detailed review of the data set underlying the EPA May 2008 report, in conjunction with the existing geological and mineralogical literature of the CCMA, indicates the sources of the naturally occurring nonasbestiform amphibole would have included though not necessarily be limited to
    1. Rock contact zones from Jurassic Franciscan inclusions, jadeite pods, and synenites of the type described by Coleman [1957, 1961, 1986], Yoder and Chesterman [1950], Cohan [1962], Fowkes [2004], Iddings and Fowkes [2008] and other works and as alluded to by Poppendorf and Wenk [1984] per metamorphic zones.
    2. Naturally occurring cross fiber chrysotile from old asbestos mines near the head of Clear Creek and / or from commercial chrysotile used in some of the historical industrial materials e.g. around retorts and kiln stoppings [see Iddings and Fowkes, 2008].
    3. Nonasbestiform tremolite washed down a Clear Creek tributary from the Victor Claim to Staging area 4.
    4. Sources outside the CCMA (Amador pers com, 2008).
    5. Damaged malfunctioning sampling equipment.
    6. Historical industrial amphibole e.g from '150 years' of industrial mine dust collecting along the R1-R2 sampling routes [Iddings & Fowkes, 2008]
  - d. Earlier EPA CCMA documentation e.g. 1989 – 1990 said the only type of asbestos found in the area is chrysotile (also see Ilgren, 1004)

- e. EPA CCMA ABS 2004 – 2005 documents failed to mention finding amphibole.
- f. Two earlier CCMA ABS studies (Univ. of Calif. Berkley [Cooper et al, 1979; Poppendorf and Wenk, 1984; the BLM [PTI 1992]) failed to identify amphibole asbestos in the CCMA air samples<sup>1</sup>
- g. Extensive analysis of the available geological and mineralogical investigations of the CCMA [e.g. Yoder and Chesterman, 1950; Coleman 1957, 1961, 1986; Van Balen 1995, 2004; Fowkes, 2004; Iddings and Fowkes, 2008; Eckels and Myers, 1946; and Cohan, 1962] failed to identify asbestiform amphibole.
- h. Reanalysis of ore samples from the UCC Joe Pit [Pooley, 2008] failed to find amphibole [also see Ilgren, 2004].
- i. The soil samples in the EPA 2008 report failed to identify amphibole at the limit of detection (1%) for PLM. Two samples were said to be ‘positive’ at <1%. One of the two samples was actually said to be negative by a second analyst (cf: file 05-034, “DSB” per “fifth” CD received from Sara Goldsmith, Esq., EPA labeled “CCMA, 10/7/08, 11 files provided responsive to EI’s voice mail of 9/25/08”).
- j. No amphibole structures were found in two sets of soil samples taken after the EPA May 2008 report was issued (23 Feb 06 and 13 Dec 05).
- k. Anomalously, the EPA 2008 report failed to list one single cleavage fragment in 169 tabular pages of direct transfer TEM data (in the “fifth” CD received from Sara Goldsmith, Esq., EPA labeled “CCMA, 10/7/08, 11 files provided responsive to EI’s voice mail of 9/25/08”). The structural information needed to confirm the alleged asbestiform nature of the amphibole structures was not provided in the FOIA response materials. This information included the sketches of the structures. A few photos were provided but all of them were totally black. The EPA repeatedly refused to provide representative samples of the direct TEM transfer filters to confirm the habit of the amphibole structures even though the precise filter numbers were available to limit the size of the request.
  - l. Some types of amphiboles were simply labeled as “other amphibole”, “nonregulated amphibole”, “EPA2 like amphibole”, “Libby amphibole” and “Libby like amphibole” but these were not defined further in the EPA FOIA response materials.
- 7. Coalinga type chrysotile fibers were extensively undercounted due to misidentification and / or arbitrary (‘for client’) modification of the standard ISO counting rules.
- 8. Non-asbestos materials (NAM) e.g. cellulose and other non asbestos based fibrous materials were seen in up to 5% of some soil samples (“fifth” CD - “CCMA, 10/7/08, e.g. see O6-076: R116-01 – 013) but these were not identified in the air sampling data.
- 9. The assumption that the ‘air samples collected (by the EPA) ... are probably more representative of the CCMA mineral mix than soil samples collected from discrete locations or from CCMA mines” was totally unjustified (e.g. see Pooley, 2008 and

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<sup>1</sup> Prior to the ABS conducted by the EPA for the 2008 report, the BLM had recently undertaken heavy construction along some parts of the sampling routes, scarifying the soil surface and thus potentially laying bare areas of contact potential tremolite containing rock [Amador pers com 2008]

- the points listed above). In fact, the EPA sampling point nearest any of the CCMA mines (i.e. the UCC Joe pit) was more than 6 miles away.
10. The EPA air sampling data was confounded due to overload. Some of this appeared to be due to rainy weather i.e. many filters were clogged with mud and thus thrown out). Damaged and malfunctioning equipment were also potentially confounding.
  11. It is totally unclear why the EPA waited thirty years ago to insist on the closure of the CCMA since Cooper et al [1979] published a report in one of the most widely read scientific international journals three decades ago indicating that the asbestos levels generated on the CCMA by the same type of ABS recreational activities exceeded OSHA levels<sup>2</sup>.
  12. The EPA has continued to insist on asbestos superfund ‘cleanup’ measures in the absence of compliance standards e.g. the EPA put three sites at the CCMA onto the NPL in 1990 for Superfund remediation and six years later took at least one of the Sites off the list on the grounds they had been ‘cleaned-up’ despite the absence of pre- and post-cleanup benchmarks.
  13. The EPA’s Superfund contractors [WCC, 1989] concluded that the ‘intensity of recreational use ... did not change the ranking position’ in their risk matrix and ‘primary ranking criteria’ for asbestos superfund cleanup on the CCMA.
  14. The EPA’s asbestos risk models have overestimated the risk of mesothelioma in other settings such as the Thetford chrysotile residential studies [Camus et al, 2002] leading the authors to conclude the EPA risk assessment methodology was seriously flawed. .
  15. The EPA continues to rely on their base 1986 risk assessment document [EPA600/8-84-003F: Nicholson’s “Airborne asbestos health update] even though the EPA sent it to Sir Richard Doll and Prof. Julian Peto for critical review and comment in 1985. Doll and Peto thus stated, amongst other things, that ‘brief intense exposure to chrysotile has never been shown to cause either lung cancer or mesothelioma’
  16. The EPA’s CCMA [2008] document said the risks could be overestimated if the asbestos from the CCMA did not biopersist. However, the EPA failed to acknowledge the fact that Coalinga chrysotile does not biopersist [Ilgren and Chatfield, 1998].
  17. The EPA’s CCMA [2008] document said “the only fiber size which has been linked to asbestos disease (is) the longer ... PCME fibers”. However, in the same document the EPA said most of the Coalinga chrysotile fiber was ‘short’ leading one to conclude that this is another source of risk estimation<sup>3</sup>.

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<sup>2</sup> One would have thought the EPA would have acted on the basis of Cooper et al’s [1979] findings since they said ‘this is the first instance of which we are aware in which naturally airborne asbestos, not the result of mining, milling or other industrial activity has been shown to occur at levels comparable to those in the workplace. It reflects of course the extremely high chrysotile content of the New Idria Serpentinite. The airborne fibers in the Clear Creek recreational area have diameters, lengths, and concentrations that could be hazardous to health if inhaled over long periods of time. ... sustained or frequently repetitive exposures to concentrations such as reported at Clear Creek especially by children, do not seem justifiable. The reported ‘airborne concentrations approach the maximum that might be expected from natural sources in view of the unusually high concentrations of chrysotile in the rocks (approaching 100%) and soil, the dry terrain, and the dust generating activities that were taking place’. ... “The need for restrictions of use or other protective measures for the general population should be considered. Occupational health standards provide guidelines but they are not legally applicable or appropriate in view of the nature of the exposures and the population at risk. An industrial plant in which the observed concentrations prevailed even intermittently would be required to take action to meet OSHA regulations. Environmental Protection Agency standards that prohibit visible emissions containing asbestos presumably would be violated if an industrial site permitted such dust clouds. The Federal Government probably cannot ignore exposures in a recreational area under its control if its guiding principle is that there is no threshold level of carcinogenic effect for asbestos so that ‘exposures must be reduced as low as feasible’” [Cooper et al, 1979].

<sup>3</sup> The EPA CCMA [2008] document also said the dust clouds from crocidolite fiber tend to occur as very short fibers and that ‘the majority of fibers detected in CCMA air samples ... present with a fiber size distribution similar to that recently published for commercial chrysotile’. Neither statement is true.

18. The EPA's CCMA [2008] document claimed children are more susceptible than adults to asbestos exposure and mesothelioma development. There are no human data to support this proposal. In fact, children exposed from birth to the most potent mesothelioma inducing agent known, fibrous erionite, still develop mesotheliomas twenty or more years after first exposure in a manner similar to adults. In contrast, Selikoff suggested older workers at the amosite plant in Paterson NJ were more susceptible than younger ones for mesothelioma . development [Seidman et al, 1986].
19. The EPA's CCMA [2008] claimed 'noncancerous' effects may be more important than cancer ones. However, the only significant noncancerous effect is asbestosis and this only occurs at occupational exposure levels of the kind that would never be found at the CCMA.
20. The EPA's CCMA [2008] document claimed the CCMA recreational exposure situation is somehow similar to the environmental exposure settings found in Turkey, Sicily, and New Caledonia. This is totally incorrect. The mesothelioma excess found in those locations is due to the use of a tremolitic asbestos whitewash (Turkey and New Caledonia) and the use of a rare amphibole called flouredenite (Sicily) as a building material.

In conclusion, I continue to see no reason whatsoever for the BLM to close the CCMA. The closure is not consistent with the science. There is no evidence of risk to those occupationally, paraoccupationally, and/or environmentally/recreationally exposed to the asbestos found on the CCMA or any materials viewed by others as having 'asbestos like' properties namely amphibole cleavage fragments. Not one single case of attributable asbestos related disease has been identified out of the millions thus exposed over the last 50 years. If the form of asbestos presently of concern was as toxic as other types of asbestos, such disease would have been identified.

Yours most sincerely,

/s/ E.B. Ilgren

Ed Ilgren