

Office of Environmental Health Hazard Assessment



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Edmund G. Brown Jr.
Governor

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CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
1515 CLAY STREET
OAKLAND, CALIFORNIA 94612

Mr. Scott Lutz
Manager, Toxic Evaluation Section
Bay Area Air Quality Management District
939 Ellis Street
San Francisco, California 94109

Subject: Review of risk assessment for Lehigh Permanente Plant

Dear Mr. Lutz:

The March 2011 revised health risk assessment for airborne emissions from **Lehigh Southwest Cement Company's Permanente Plant** in Cupertino has been reviewed by staff of the Office of Environmental Health Hazard Assessment (OEHHA), as required by Health and Safety Code Section 44361. The facility produces cement from limestone "clinker." The report uses several emissions scenarios to estimate risk including year 2005, average years 2008/2009, and years 2010, 2011, and 2013 production scenarios. The 2013 scenario is based on the throughput of 1,600,000 tons of clinker. (On page 1 of the report the maximum facility production of clinker is erroneously stated to be 1,600,000 million tons.) The report uses AERMOD and HARP computer programs to model the risks due to 69 Hot Spots chemicals emitted from 42 sources at thousands of receptors. The highest estimated air emissions from the facility were in 2005 and included 9650 lbs. of benzene, 2.19 lbs. of hexavalent chromium, 2.3 lbs. of arsenic, 1040 lbs. of crystalline silica, 1280 lbs. of mercury, 8650 lbs. of toluene, and 6940 lbs. of mixed xylenes (Table ES-2).

The risk assessment reports that the total cancer risk from the highest emissions scenario at the off-site PMI (Point of Maximum Impact; receptor 12506) is 1.7×10^{-5} (2013 emissions). Hexavalent chromium, benzene, and arsenic, which are known human carcinogens, contribute to the risk. The risk at the MEIW (worker) is 1.3×10^{-6} . The highest cancer risk at the MEIR (resident) is 8.5×10^{-6} . The risk calculation includes the incorporation of a factor (LASF) of 1.7 to account for the greater sensitivity of infants and children to carcinogens. A more precise calculation, with likely a higher risk result, can be made using children's breathing rates after the Scientific Review Panel on Toxic Air Contaminants finalizes the new draft breathing rate values.

California Environmental Protection Agency

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption.

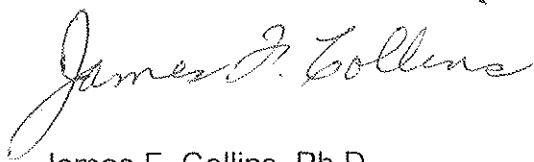
The highest chronic hazard index (HI) is stated to be 0.41 (at receptor 2037 for average 2008/2009 emissions) for the nervous system due principally to emissions of mercury (average 2008/2009 emissions) (Table ES-1). The maximum acute HI is 0.34 at an actual resident receptor (MEIR) and 0.18 at an actual worker receptor (MEIW).

The highest acute hazard index (HI) is predicted to be 4.4 (at receptor 13156, the PMI) for adverse effects on the nervous system and on development due to emissions of mercury (Table ES-1). The value was based on the average 2008/2009 (low) production rates. Based on 2011 emission rates the value is 1.6 at the PMI. The receptor is stated to be in an open space area with no permanent residents. Based on 2011 emission rates the maximum acute HI is 0.76 at an actual resident receptor (MEIR) and 0.94 at an actual worker receptor (MEIW).

OEHHA is currently updating its risk assessment guidelines pursuant to the Children's Environmental Health Protection Act of 1999. On June 18, 2008 the Scientific Review Panel on Toxic Air Contaminants approved OEHHA's Technical Support Document for the Derivation of Noncancer Reference Exposure Levels. The updating of Reference Exposure Levels (RELs) for specific chemicals is in process. On December 19, 2008 the Director of OEHHA adopted new acute, 8-hour, and chronic RELs for acetaldehyde, acrolein, arsenic, formaldehyde, manganese, and mercury. The most current health values were used in this risk assessment (Table 11).

Our analysis of the risks depends on the accuracy of the emissions estimates and the appropriateness of the air dispersion modeling. Our review was based on the electronic copy received from the District. The intent of this letter is to confirm or reevaluate the results of the risk assessment; it should not be construed to imply that OEHHA agrees with any editorial comments or statements contained in the text of the risk assessment that do not impact the results. For example, we do not agree with the assertion in this report that OEHHA's unit risk values purposely over-predict the likelihood of a carcinogenic response. We hope that our comments are useful to the District and will help in any risk management decisions. If you would like to discuss the review, please call me at (510) 622-3146 or Dr. Bob Blaisdell at (510) 622-3142.

Sincerely,



James F. Collins, Ph.D.
Staff Toxicologist
Air Toxicology and Epidemiology Branch