



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

LEHIGH SOUTHWEST CEMENT PLANT
(Formerly: Hanson Permanente Cement)
(#A0017)
24001 Stevens Creek Boulevard
Cupertino, CA 94014

FACT SHEET

September 17, 2009

Background

- The Lehigh Southwest Cement Plant (formerly Hanson) is located in unincorporated Santa Clara County, west of Cupertino. Mining on the site dates back to the 1880's, and the cement plant was established in 1939.
- The facility excavates limestone from an on-site quarry for use as a raw material in cement manufacturing. The limestone, and other raw materials, are crushed into a fine powder and blended in the correct proportions. This blended raw material is heated in a pre-heater and rotary kiln where it reaches a temperature of about 2,800 degrees Fahrenheit. The material formed in the kiln, known as "clinker", is subsequently ground and blended with gypsum to form cement.
- Nitrogen oxides (NO_x), sulfur dioxide (SO₂), and particulate matter (PM), are the primary criteria air pollutants emitted from cement manufacturing. Small quantities of volatile organic compounds (VOC), including the toxic air contaminant (TAC) benzene, are also emitted from the kiln. TAC emissions also include trace metals such as mercury, cadmium, chromium, arsenic, nickel, and manganese. The kiln exhaust is equipped with NO_x and SO₂ continuous emissions monitors to determine compliance with applicable emission limitations. PM and metallic TAC emissions are controlled at the facility by fabric filtration, which is used at various material crushing, grinding, and loading operations, and at the kiln, which is the largest source of emissions.
- Lehigh is subject to a variety of District, State, and Federal air quality rules and regulations that are delineated in the facility's Title V Permit. A Health Risk Assessment (HRA) completed under the Air Toxics Hot Spots Program indicates that the maximum public health risks associated with the facility's TAC emissions are under thresholds requiring public notification.

Public Comments/Issues

- In November 2007, District staff met with representatives of the West Valley Citizen Air Watch (WVCAW) to discuss the Quarry Reclamation Plan Amendment proposal, and other air quality issues associated with the facility. The Reclamation Plan

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Amendment entails modification of the existing Reclamation Plan for reclamation activities at the facility's quarry, which expires in March 2010. The proposed Reclamation Plan Amendment, which is being processed by Santa Clara County, would expand the existing Reclamation Plan area, to include previously disturbed areas, a new quarry pit, and extend the expected completion date of mining and reclamation activities, possibly by 25 years.

- WCAW submitted a lengthy set of questions to the District regarding the Reclamation Project and other aspects of the facility's existing operation. The District finalized a response to this information request in March 2008. District staff has subsequently processed a number of public records requests, and answered many additional questions from the public, associated with the Lehigh facility.
- On October 22, 2008, District staff participated in a community meeting organized by the Santa Clara County Office of Planning to answer questions about the facility and the Reclamation Project. A variety of concerns were expressed at this meeting including the use of petroleum coke as a fuel, general dust emissions, mercury emissions, hexavalent chromium emissions, and emissions from truck traffic. District staff also participated in a follow-up community meeting organized by Santa Clara County and held on June 11, 2009.

Facility Status

- The facility started using 100% petroleum coke as a fuel on May 30, 2007, after receiving a permit from the District for this fuel change. Prior to this project, the typical fuel mix had consisted of 90% coal and 10% coke. Emissions data show that this fuel change has reduced SO₂ and CO emissions, and has had no significant effect on the emissions of other regulated air pollutants. On October 31, 2008, at the request of EPA Region IX, Lehigh submitted a demonstration that the fuel change project did not trigger federal PSD permit requirements. EPA has not yet finalized their review of this submittal.
- Lehigh has withdrawn a permit application that had been submitted to further increase the permitted coke usage at their facility. A separate application for the use of bio-fuels in the kiln has been placed on an inactive status at the request of the applicant. In April 2009, Lehigh was granted a permit to install enhanced vapor recovery equipment on their existing non-retail gasoline dispensing operation due to a regulatory requirement change. In June 2009, the District issued a Permit to Operate to Lehigh for two storage pile areas. In July, 2009, the District modified the existing permit conditions to correct the emission limits of toxic air contaminants.
- Lehigh submitted an application to renew their Title V Permit on April 28, 2008. A Title V Permit is a compilation of all existing applicable air quality requirements including emissions limits and standards, monitoring, record keeping, and reporting

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requirements. Title V Permits cannot be used to establish new emission limits and standards. Title V Permit renewals are required every five years, and the District has 18 months to act on an application (in the case of Lehigh, by October 28, 2009), or until EPA and public review processes have been completed. The existing Title V Permit will continue in force until the District takes final action on the renewal application. The EPA and public review process commenced on August 12, 2009 for the Lehigh Title V Permit renewal, and a public hearing is scheduled for September 17, 2009 in the community to solicit comments.

- In May 2009, Lehigh installed six continuous volumetric flow meters (four at the kiln exhausts, and two at the fuel mill exhausts). These meters will enhance the monitoring of criteria pollutant emissions from the calcining process.
- Since August 2004, there have been twenty-one violations at the Lehigh facility that resulted in the issuance of nineteen Notices of Violation. The violations can be characterized as emissions related, administrative, or permit related in nature. There were 11 emissions related violations; most were cited for excessive visible emissions of dust or smoke from various facility sources. The facility expeditiously took corrective action and brought these violations into compliance. There were eight administrative violations, which included various record keeping deficiencies and late reporting of required reports. Lehigh took corrective action on these violations and brought them into compliance. The two permit related violations documented unpermitted material stockpiles. Lehigh has obtained the necessary permits and is currently in compliance with District permit requirements. Based on this compliance history, there is currently no ongoing violation or pattern of recurrent violation that represents ongoing noncompliance.

Toxic Air Contaminants

- Following an article appearing in the San Francisco Chronicle, District staff provided community members with information regarding the health effects associated with mercury emissions from the Lehigh cement kiln. Based on HRA results, the mercury health risks are well below Reference Exposure Levels (RELs) established by Cal/EPA's Office of Environmental Health Hazard Assessment (OEHHA). RELs are concentrations at or below which no adverse non-cancer health effects are anticipated in the general human population, and are designed to protect the most sensitive individuals in the population by the inclusion of margins of safety. The mercury RELs were revised by OEHHA on December 19, 2008, to explicitly include consideration of possible differential effects on the health of infants, children and other sensitive subpopulations, in accordance with the mandate of the Children's Environmental Health Protection Act.
- District staff has conferred with staff of Monterey Bay Unified Air Pollution Control District (MBUAPCD) and South Coast Air Quality Management District (SCAQMD)

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regarding the reason for elevated levels of hexavalent chromium reported downwind of cement plants located in Davenport and Oro Grande, California. It is believed that these elevated hexavalent chromium levels are the result of the use of steel slag as a raw material and/or the use of uncovered clinker storage piles. The Lehigh facility in the Bay Area uses a naturally occurring iron ore that has much lower chromium levels than steel slag, and also utilizes enclosed silos rather than open storage piles for clinker storage.

- The District required that Lehigh collect additional data regarding chromium (as well as mercury, other metallic Toxic Air Contaminants (TACs), and crystalline silica) in fugitive dust, and other sources at the facility in addition to the kiln. This comprehensive TAC emissions inventory update was submitted to the District on March 30, 2009, and is currently under review. The District has performed preliminary air dispersion modeling analyses based on the recently reported emissions. These preliminary analyses indicate that the risk levels are slightly higher than the results of the previous Health Risk Analysis (HRA), but the Air Toxics Hot Spots Program action levels are still not exceeded.

Ambient Air Monitoring

- Because of recent concerns about elevated hexavalent chromium found near some cement plants, the U.S. EPA and the District installed ambient air monitoring equipment at Stevens Creek Elementary School, located approximately two miles from Lehigh, to measure hexavalent chromium as part of its School Air Toxics Monitoring Initiative. The EPA provided the instruments and laboratory analysis, while the District installed and operates the equipment. The monitoring commenced in July 2009 and will last a year.
- As of September 3, 2009, there were seven samples taken at the Stevens Creek Elementary School. No hexavalent chromium was detected in the first 3 samples taken. A very small amount was detected in the fourth through seventh samples. To date, this monitoring is consistent with the District's risk modeling, which shows the hexavalent chromium emissions from Lehigh do not present significant health risks. EPA and the District will be continuing the monitoring, and new results will be posted on EPA's website approximately once every two weeks at <http://epa.gov/region09/air/schools-monitor/index.html>.
- On October 28, 2008, the District began operating an ambient air monitor in the vicinity of the Lehigh facility adjacent to Stevens Creek Boulevard to determine if truck traffic and road dust associated with the facility were having an adverse impact on particulate matter levels in the nearby community. The air monitor continuously records particulate matter of 10 microns or less (PM10) in the air, and the monitor will remain in place for at least one year. While preliminary monitoring results at this site appear to be similar to other communities, the District needs to collect a full year's

data before drawing conclusions. Real-time data collected are available for review on the District website.

Ongoing Activities

- On April 28, 2009, District staff conducted outreach to South Bay trucking companies, including those that service Lehigh, to educate them about Air District grants available for truck retrofits to reduce diesel emissions from on-road trucks. Several interested firms have contacted the District to take advantage of the program.
- Santa Clara County has indicated that the Lehigh Quarry Reclamation Plan Amendment requires additional geologic studies, which are underway. Preparation of an environmental impact report is on hold pending completion of the geologic studies. The current reclamation plan will remain in effect while processing the proposed amendment continues. In response to a Notice of Violation to the mine operator by the County, Lehigh submitted a separate reclamation plan amendment to address stockpiling of material from the quarry in an unauthorized location. This separate amendment is being processed by the County, which estimates it will take final action by June 2010.
- Proposed EPA rule amendments to the existing 40 CFR 63, Subpart LLL, National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry, were published on May 6, 2009. If finalized, these rule amendments would require Lehigh and other cement plants in the United States to significantly reduce emissions of mercury and other toxic air contaminants. The EPA proposal is based on a review of Maximum Achievable Control Technology (MACT).
- Staff is evaluating a potential control measure for inclusion in the 2009 Clean Air Plan that would establish more stringent standards for NO_x and/or SO₂ emissions at the Lehigh cement kiln.