

Alamo, Austin, and Lone Star chapters of the Sierra Club  
Aquifer Guardians in Urban Areas  
Bexar Audubon Society  
Bexar Green Party  
Boerne Together  
Cibolo Nature Center  
Citizens Allied for Smart Expansion  
Citizens for the Protection of Cibolo Creek  
Environment Texas  
First Universalist Unitarian Church of San Antonio  
Friends of Canyon Lake  
Friends of Dry Comal Creek  
Friends of Government Canyon  
Fuerza Unida  
Green Party of Austin  
Headwaters at Incarnate Word  
Hays Community Action Network  
Helotes Heritage Association  
Helotes Nature Center  
Hill Country Planning Association  
Green Society of UTSA  
Guadalupe River Road Alliance  
Guardians of Lick Creek  
Kendall County Well Owners Association  
Kinney County Ground Zero  
Leon Springs Business Association  
Medina County Environmental Action Association  
Native Plant Society of Texas – SA  
Northwest Interstate Coalition of Neighborhoods  
Preserve Castroville  
Preserve Lake Dunlop Association  
San Antonio Audubon Society  
San Antonio Conservation Society  
San Geronimo Nature Center  
San Geronimo Valley Alliance  
San Marcos Greenbelt Alliance  
San Marcos River Foundation  
Save Barton Creek Association  
Save Our Springs Alliance  
Scenic Loop/Boerne Stage Alliance  
Securing a Future Environment  
SEED Coalition  
Solar San Antonio  
Sisters of the Divine Providence  
The Green Society at UTSA  
Travis County Green Party  
Water Aid – Texas State University  
Wildlife Rescue & Rehabilitation  
Wimberley Valley Watershed Association

November 30, 2017

**Re: Comments: air quality permit # 149060 for a Cement Batch Plant Vulcan Construction Materials, LLC. Kendall County**

Please accept these comments on behalf of the fifty two member groups of the Greater Edwards Aquifer Alliance (GEAA). GEAA is a non-profit coalition of organizations united to advocate preservation of the water, wildlife, scenic beauty, and cultural heritage of the Edwards Aquifer and the Texas Hill Country. We appreciate the efforts of the Texas Commission on Environmental Quality (TCEQ) in working with stakeholders to implement better environmental safeguards through the review process for expedited standard air permits. GEAA and its members take this opportunity to request denial of this permit application or at a minimum, require a public meeting and contested case hearing.


Cement Batch operations have an impact on human health and the natural environment through the effects of particulate matter (PM) on air quality on surrounding communities and negative impacts to the Edwards Aquifer and the water quality of regional karst groundwater and surface water resources. Millions of users depend on the Edwards Aquifer for drinking water and recreation. Any pollution caused by granting this permit could negatively affect downstream users, as well as the endangered species endemic to this portion of the Texas Hill Country. Pollution and pumping of groundwater also affects wells of adjacent landowners. These are issues that go largely unaddressed under the current permitting.

We request that an Environmental Impact Assessment be included in the application for an air permit. This Assessment should include air quality of the entire site; source and fugitive particulate matter pollution, emission from diesel engines including trucks, impact to existing water quality and quantity of surface and ground water along with the expected changes to the area's hydrology, a traffic impact analysis and, finally, the impact to endangered species (completed by an independent biologist) to be reviewed by US Fish and Wildlife before a permit. Once this assessment is provided, agencies' staff and the public can better ascertain the true impact.

Attached is a list of concerns that are supported by scientific research to provide staff with additional information. The TCEQ is charged with the responsibility to protect the health of Texans and the State's environment. We believe that the issuance of this expedited standard permit does not accomplish this charge. You can learn more about GEAA and our member groups through links on our web-site at [www.aquiferalliance.org](http://www.aquiferalliance.org).

Thank you for this opportunity.

Sincerely,



Annalisa Peace  
Executive Director

## Cement Batch Plants:

### 1. Health issues:

- a. **Hazard:** Exposure to cement dust can irritate eyes, nose, throat and the upper respiratory system. Skin contact may result in moderate irritation to thickening/cracking of skin to severe skin damage from chemical burns. Silica exposure can lead to lung injuries including silicosis and lung cancer.  
[https://www.osha.gov/Publications/concrete\\_manufacturing.html](https://www.osha.gov/Publications/concrete_manufacturing.html)
- b. **Abstract:** Even in the 21st century, millions of people are working daily in a dusty environment. They are exposed to different types of health hazards such as fume, gases and dust, which are risk factors in developing occupational disease. Cement industry is involved in the development of structure of this advanced and modern world but generates dust during its production. Cement dust causes lung function impairment, chronic obstructive lung disease, restrictive lung disease, pneumoconiosis and carcinoma of the lungs, stomach and colon. Other studies have shown that cement dust may enter into the systemic circulation and thereby reach the essentially all the organs of body and affects the different tissues including heart, liver, spleen, bone, muscles and hairs and ultimately affecting their micro-structure and physiological performance. Most of the studies have been previously attempted to evaluate the effects of cement dust exposure on the basis of spirometry or radiology, or both. However, collective effort describing the general effects of cement dust on different organ and systems in humans or animals, or both has not been published. Therefore, the aim of this review is to gather the potential toxic effects of cement dust and to minimize the health risks in cement mill workers by providing them with information regarding the hazards of cement dust.  
<https://www.ncbi.nlm.nih.gov/pubmed/15448758>
- c. **Health effects:** Cement can cause ill health by skin contact, eye contact, or inhalation. Risk of injury depends on duration and level of exposure and individual sensitivity. Hazardous materials include:
  - i. alkaline compounds such as lime (calcium oxide) that are corrosive to human tissue
  - ii. trace amounts of crystalline silica which is abrasive to the skin and can damage lungs
  - iii. trace amounts of chromium that can cause allergic reactions.<http://elcosh.org/document/1563/d000513/cement-hazards-and-controls-health-risks-and-precautions-in-using-portland-cement.html>
- d. Edward's limestone contains silica (a); some which is in the crystalline formulation which has the greatest long -term health effect including cancer, according to current research;.(a) J.S. Pitman, Silica in Edwards Limestone, Travis County, Texas. 1959 and (b) <http://npic.orst.edu/factsheets/degen.html>
- e. **How much silica dust is too much?**  
It only takes a very small amount of the very fine respirable silica dust to create a health hazard. Recognizing that very small, respirable silica particles are hazardous, OSHA regulation 29 CFR 1926.55(a) requires construction employers to keep worker exposures at or below a Permissible Exposure Level (PEL) of 50 µg/m<sup>3</sup>. The American Conference of Governmental Industrial Hygienists has a lower non-regulatory Threshold Limit Value of 25 µg/m<sup>3</sup>. More information about the hazard and links to examples of exposures with and without controls compared to the OSHA PEL, can be found at "Know the Hazard? Why is Silica Hazardous?" <https://www.silica-safe.org/ask-a-question/faq>

- f. The spatial isopleths of TSP concentration for cement plant and its surrounding environment indicated that the predicted ground level of dust concentrations, close to the cement plant, exceeded the World Health Organization (WHO) guideline value of  $120 \mu\text{g}/\text{m}^3$ . "Impact of fugitive dust emissions from cement plants on nearby communities" Sabah A. Abdul-Wahab
- g. From 1979 to 1981, several medical surveys were carried out among a population living in the vicinity of a cement plant that emitted dust containing thallium until August 1979. Air, soil, plants, and domestic animals in the area were contaminated by thallium and this led to an increased intake of thallium in the population, mainly due to the consumption of home-grown vegetables and fruit. Children attending a kindergarten situated about 0.5 km from the cement plant. As compared to an "unexposed" reference population (mean TIU:  $0.3 \mu\text{g}/1$ ), the majority of the population living in the cement plant area had significantly elevated urinary thallium levels (range:  $< 0.1$ – $76.5 \mu\text{g}/1$ ) indicating a substantially increased environmental exposure. "Repeated surveillance of exposure to thallium in a population living in the vicinity of a cement plant emitting dust containing thallium" R. Dolgner, A. Brockhaus, U. Ewers, H. Wiegand, F. Majewski, H. Soddemann, International Archives of Occupational and Environmental Health, June 1983, Volume 52, Issue 1, pp 79–94.

## 2. Environmental impacts

- a. Different industrial activities are degrading various environmental components like water, air, soil and plant vegetation. In India, the Cement industry has been listed as one of the 17 most polluting industries. Cement industry is the major source of particulate matters, SO<sub>x</sub>, NO<sub>x</sub> and CO<sub>2</sub>, emissions. Cement dust contains heavy metals like nickel, cobalt, lead, chromium, pollutants hazardous to the biotic environment, with impact for vegetation, human and animal health and ecosystems. "IMPACT OF DUST EMISSION ON PLANT VEGETATION IN THE VICINITY OF CEMENT PLANT" Shukla Sudheer Kumar<sup>1</sup>, Nagpure Ajay Singh<sup>2</sup>, Vivek Kumar<sup>1</sup>, Baby Sunisha<sup>3</sup>, Shrivastava Preeti<sup>3</sup>, Singh Deepali<sup>3</sup>, Shukla Ravindra Nath<sup>3</sup>: Environmental Engineering and Management Journal January/February 2008, Vol.7, No.1, 31-35  
<http://omicron.ch.tuiasi.ro/EEMJ>  
[https://s3.amazonaws.com/academia.edu.documents/46674276/IMPACT\\_OF\\_DUST\\_EMISSION\\_ON\\_PLANT\\_VEGETAT20160621-23176-162rmtt.pdf?AWSAccessKeyId=AKIAIWOWYYGZ2Y53UL3A&Expires=1512078634&Signature=DdUXGwAzl7KzCG63TxbfE0rEu5U%3D&response-content-disposition=inline%3B%20filename%3DImpact\\_of\\_dust\\_emission\\_on\\_plant\\_vegetat.pdf](https://s3.amazonaws.com/academia.edu.documents/46674276/IMPACT_OF_DUST_EMISSION_ON_PLANT_VEGETAT20160621-23176-162rmtt.pdf?AWSAccessKeyId=AKIAIWOWYYGZ2Y53UL3A&Expires=1512078634&Signature=DdUXGwAzl7KzCG63TxbfE0rEu5U%3D&response-content-disposition=inline%3B%20filename%3DImpact_of_dust_emission_on_plant_vegetat.pdf)
- b. Fugitive emissions, such as those arising from large public construction works, cement and ceramic manufacturing, mining, heavy industries, handling and transport of powdered raw materials and road dust, are very often left out of emission monitoring and inspections or calculations for air permits issued by the TCEQ. Data support the hypothesis that the highest PM episodes are associated to fugitive emissions of mineral matter. "Impact of fugitive emissions in ambient PM levels and composition" M.Santacatalina, C.Reche, A.Escrig, V.Sanfelix, A.Carratalá, J.F.Nicolás, E.Yubero, J.Crespo, A.Alastuey, E.Monfort, J.V.Miró, X.Querol; Science of The Total Environment Volume 408, Issue 21, 1 October 2010, Pages 4999-5009.  
<https://doi.org/10.1016/j.scitotenv.2010.07.040>.

- c. The alkaline constituents such as oxides of calcium, potassium and sodium are responsible for the alkalization of ecosystem and soil. It is a common air pollutant affecting plants in various ways- deposition on leaves plugs stomatal activity and interrupts light absorption and gaseous diffusion which affects plant health and productivity. <http://www.icontrolpollution.com/articles/impact-of-crushing-and-quarrying-onvegetation-.pdf>
- d. Dust from quarry activities has been known to affect biodiversity occurs in diverse in ways, it can disturb plant growth by settling on leaves and hinder photosynthesis thus disrupting food chains. It can also settle in water bodies and cause pollution. <http://www.quarrylifeaward.com/sites/default/files/media/gh-35-en-impactquarryonwaterresources-finalr.pdf>