

April 22, 2024

Texas Commission on Environmental Quality
Edwards Aquifer Protection Program – MC R11
PO Box 13087
Austin, TX 78711-3087
Submit via email to: eapp@tceq.texas.gov

RE: Opposition to the Vulcan Comal Quarry Plant
TCEQ Edwards Aquifer Permit #: 13001906

These comments are submitted on behalf of Preserve our Hill Country Environment (PHCE) Foundation, PHCE, and PHCE's seventy-eight Affected Parties to Vulcan's air quality permit #147392L001 and the over three-thousand advocates that follow us on our Friends of Dry Comal Creek Facebook page and subscribe to our Stop 3009 Vulcan Quarry and PHCE email lists. PHCE Foundation is a 501(c)(3) nonprofit organization that was created to preserve, protect, and restore the land, water, air, wildlife, and the geological formations that make the Texas Hill Country unique.

PHCE and advocates ask that TCEQ grant a public meeting and consider a contested case hearing naming all as affected parties.

The Site:

Vulcan Construction Materials LLC., is proposing the construction of a quarry with associated plant areas, office, shop areas, and driveway on approximately 1,515.16 acres. The nine (9) proposed quarry Mining Areas comprise approximately 956 acres. The site sits entirely over the Edwards Aquifer Recharge Zone (EARZ) and is surrounded by heavily populated residential and ranching communities. Notably, the pristine West Fork Dry Comal Creek runs through, and multiple caves lie beneath the surface of this scenic and consequential segment of the Texas Hill Country. The proposed quarry site is located on the southwest corner of FM 3009 and SH-46, Comal County, Texas.

Air Permit History:

In February 2020, after exhausting all Texas Commission on Environmental Quality (TCEQ) protocols for contesting Vulcan's air quality permit, PHCE sued the TCEQ for

issuing the permit without adequately considering the impacts on the environment, natural resources, and the health of the community, as required by state law. In March 2021, PHCE won an unprecedented victory in District Court: the judge reversed and vacated Vulcan's air quality permit. TCEQ and Vulcan subsequently appealed the trial court decision to the Texas Third Court of Appeals. In September 2022, the Third Court of Appeals reversed the trial court's decision and affirmed the TCEQ Commissioners' order granting Vulcan its air permit. PHCE filed a Petition for Review with the Texas Supreme Court, asking them to reconsider the Third Court's decision. The petition was denied.

Of consequence: March 6, 2024, EPA published its new, reduced (health-based) annual PM_{2.5} standard from 12.0 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) to 9.0 $\mu\text{g}/\text{m}^3$. The background used for Vulcan's permit that PHCE challenged was 8.51 $\mu\text{g}/\text{m}^3$, and the modeling for total Annual PM_{2.5} concentrations offsite produced results of 9.1 to 9.26 $\mu\text{g}/\text{m}^3$. This was below the standard at the time of the air permit review but now surpasses the new standard.

Concerns:

Vulcan's proposed open-pit limestone mining operation would stretch across nearly three miles of the environmentally sensitive Edwards Aquifer Recharge Zone (primary water supply for over two million people, including the cities of San Antonio and New Braunfels). PHCE and its advocates are concerned about air pollution, water supply and quality, truck traffic, destruction of caves, eminent domain for a railroad spur, and decreased property values that could result from the location of this heavy industrial facility in a residential area populated by over 15,000 people.

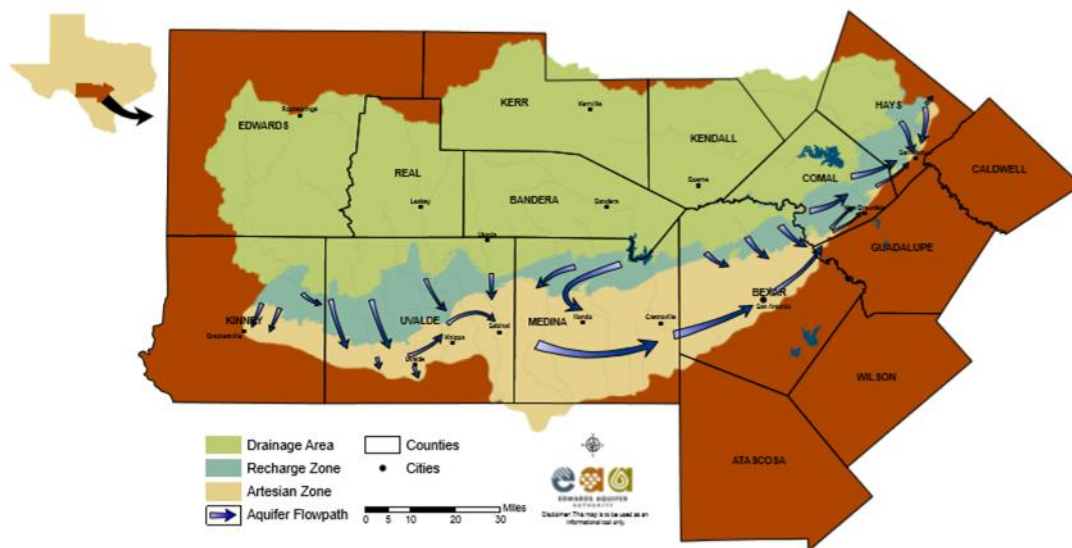
Not only does this site sit atop the EARZ but the West Fork Dry Comal Creek runs through it, converging downstream with the Dry Comal Creek before merging with the Comal River in New Braunfels. The Comal River is fed by springs from the Edwards Aquifer and is home to several endangered species. The clear, temperate waters of the Comal are widely used for recreational swimming and tubing activities before discharging into the Guadalupe River. Dry Comal Creek and Comal River are essential natural resources in Comal County, supporting economic development and recreation in the city, as well as agricultural operations and wildlife throughout the area. Comal County has numerous waterways — Dry Comal, Cibolo, Rebecca, and Honey creeks; Comal and Guadalupe rivers; Comal and Hueco springs, the

Trinity and Edwards aquifers; and Canyon Lake. If any of these water sources becomes polluted or is irreparably harmed, the others are in danger as well.

The Vulcan plant falls within the boundaries of the Dry Comal Creek/Comal River Watershed Protection Plan (WPP), an EPA sponsored effort to protect the watershed's natural resources. Since the plan's inception, planning and implementation strategies have been conducted to address water quality concerns for the West Fork Dry Comal and Dry Comal Creeks, and the Comal River.

Of note: Groundwater flow from the Vulcan site generally would move southeast then shift to the east then northeast toward Hueco and Comal Springs. Map source Edwards Aquifer Authority.

General Aquifer Flowpath



The Comal Springs are the largest springs in the southwestern United States and are fed by groundwater issuing from the Edwards Aquifer. The Comal ecosystem is home to rare and endangered aquatic species found nowhere else on Earth. These species include the Fountain Darter (*Etheostoma fonticola*), Comal Springs Dryopid Beetle (*Stygoparnus comalensis*), Comal Springs Riffle Beetle (*Heterelmis comalensis*), and Peck's Cave Amphipod (*Stygobromus pecki*).

Additionally, the quarry location is within the 100-year floodplain.

The Edwards Aquifer is a karst aquifer. Karst is characterized by its fractures and faults, caves, sinkholes, and direct recharge from area streams – in this setting lies the West Fork Dry Comal Creek, and its ability to recharge rapidly. Of concern is pollution from the quarry operation, specifically the increased sediment and up to 28% residual ammonium nitrate fuel oil mixture (ANFO) not combusted during blasting. The nitrate left over is readily dissolvable in water and will travel downgradient along groundwater flow paths. Residual contamination from explosives (especially nitrates) is a huge concern for local water quality and for potential negative impacts on endangered species.

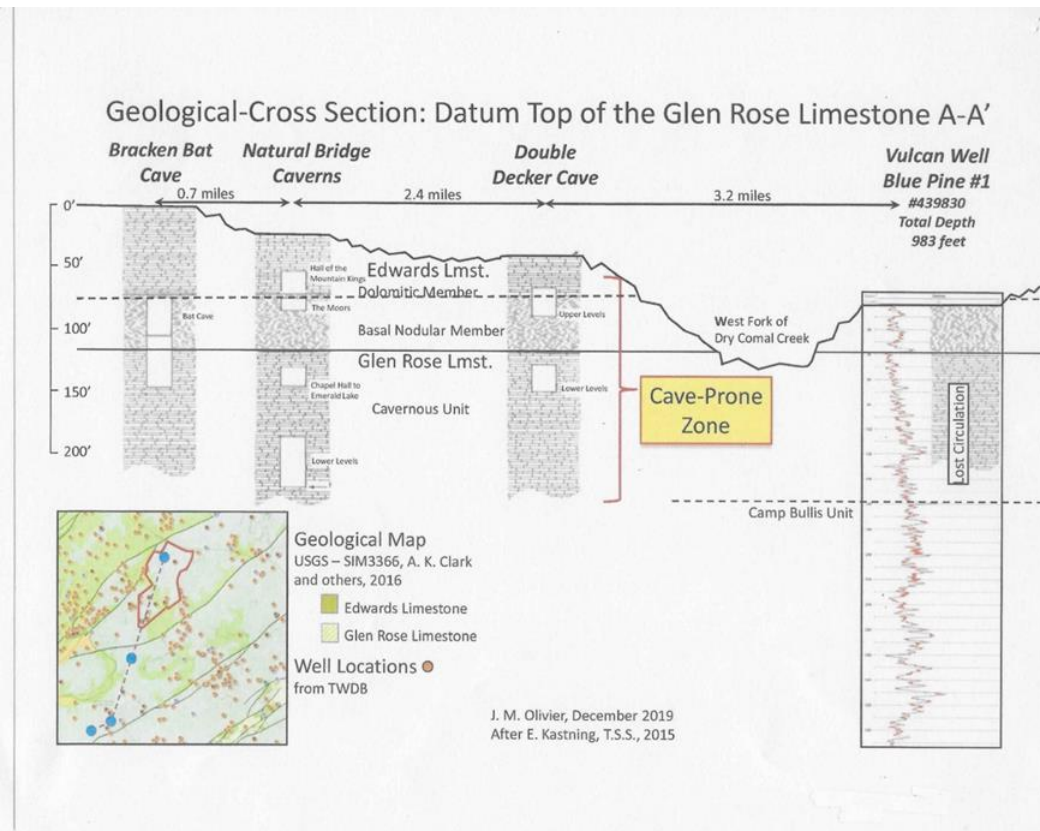
TCEQ requires that quarrying operations limit the downward expansion of the quarry to a level that is 25 ft above the highest expected water level. The WPAP states that the mining areas will not mine below an elevation of 1040 ft msl. A review by hydrogeologist Dr. Brian Smith shows that there are times when the bottom of the quarry will be flooded by the underlying aquifer. This would be a blatant violation of TCEQ regulations.

Lastly, water usage by the quarry is significant; based on water use per ton of quarried material, approximately 383 acre-ft (125 million gallons) of groundwater per year would be needed. Comal County just passed a year of extreme drought with many area wells going dry. There is not an accurate accounting of these wells, but there should be. Pulling 125 million gallons/year of water out of the aquifers would cause detrimental harm to area residents.

Additional Issues to be Addressed:

Large quarries in the EARZ should be required to provide the TCEQ with all available well logs, drilling reports, and core data. The TCEQ should also take into consideration all available cave information around the proposed site, including data maintained by the Texas Speleological Survey, data submitted to the TCEQ in Geological Assessments, and any information provided by local property owners. The WPAP does not consider the proximity of two highly active cave systems in the area, Natural Bridge Caverns and the Bracken Bat Cave.

Both cave systems run along the same Geological-Cross Section as the Vulcan Well Blue Pine #1. Map Source J. M. Olivier after E. Kastning, T.S.S.



The Best Management Practices (BMPs) for Quarry Operations need to specifically address the risk of encountering large caves, or a series of smaller caves, that are hydrologically connected to the underlying aquifers. Large quarry pits are sensitive *manmade features in bedrock* that deserve special protection because of their size.

The TCEQ's Geologic Assessment and Sensitivity Scoring System should be applied more stringently considering the evidence that groundwater pollution is possible even where no observable karst features are present. Sinkholes are not being sufficiently protected considering that they commonly occur just above caves. The relative water infiltration scoring process is too arbitrary and poorly defined. The Geologic Assessment provided by Pape-Dawson shows that 37 sensitive features were found. This number is anomalously low for the geology in this area. Further evaluation of recharge features is needed to determine areas that will require protective buffers.

The EAA should be consulted during the water-permit review process for quarries to help ensure that the destruction of caves and other sensitive karst features does not

cause serious damage to the Edwards Aquifer, surrounding water wells, and natural springs. Also, according to a recent EAA study, in the area of the proposed quarry, pollution could impact the water quality in the Trinity Aquifer.

In addition, a dye-trace study like the one conducted in 2010 by the EAA in northern Bexar County should be conducted to determine flow paths of groundwater from the site and to determine which downgradient wells might be impacted by contaminants coming from the quarry. This is especially important for Comal County because the Vulcan Site is potentially well-connected hydrologically to Comal Springs.

The operation of a quarry will contribute contamination to the underlying aquifer. To determine background water-quality conditions, water-supply wells immediately downgradient of the quarry should be sampled and analyzed for nitrates and total petroleum hydrocarbons prior to issuing a permit for the quarry.

Elevations of the aquifer should be determined prior to any excavation. The elevation of 1040 ft-msl for the bottom of the quarry, as stated in the WPAP, is likely to be out of compliance with the required buffer of 25 ft. And it is also likely that water levels in the aquifer will be above the elevation of 1040 ft-msl during periods of high-water levels.

Conclusion:

A thorough evaluation of existing data and data collected by Dr. Brian Smith in the attached "Hydrogeology of the Edwards and Trinity Aquifers..." will show that the aquifer beneath this site is highly sensitive to contamination. Because of the sensitivity of the site and the magnitude of the quarry, PHCE emphatically encourages TCEQ to deny approval of Permit #13001906. These comments are in addition to any other comments submitted on the organization's behalf, including those submitted by PHCE's attorneys at Perales, Allmon & Ice, P.C.

Respectfully submitted,



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