

Mr. Patrick Alford, Planning Manager
City of Newport Beach
3300 Newport Boulevard
Newport Beach, California 92663



NOTE: I hereby object to approval of the project in its present form. The comments below and all references contained therein are hereby incorporated into the official record of proceedings of this project and its successors.

Dear Mr. Alford:

I'm a Newport Beach resident of over thirty years and an engineer by profession and I've just read the Air Quality section of the DEIR for Banning Ranch. I have concerns about construction emissions associated with the Project, including the methodology and the modeling equipment used. Answers to the following questions would be appreciated.

On page 19 under the heading of Thresholds, it says the following:

Threshold 4.10-2 Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Construction Emissions [...]

Construction emissions were calculated using CalEEMod^(*), as described in the Methodology section (1), and based on the scenario described above and information provided in Section 3.0, Project Description. Compliance with SCAQMD Rules is required; specifically, it is assumed that construction would be performed in accordance with Rule 403, Fugitive Dust, and Rule 1113, Architectural Coatings (SC 4.10-1 and SC 4.10-2, respectively). Therefore, emissions reductions consistent with those rules have been included in the estimation of construction emissions prior to mitigation. The details of phasing, selection of construction equipment, and other input parameters are included in Appendix G of this EIR.

(1) 4.10.3 METHODOLOGY/Criteria Pollutants
Construction and Operations Mass Daily Emissions

Construction and operational emissions were calculated by using California Emissions Estimator Model (CalEEMod) version 2011.1.1 (SCAQMD 2011a). CalEEMod is a computer program accepted by the SCAQMD that can be used to estimate anticipated emissions associated with land development projects in California. CalEEMod has separate databases for specific counties and air districts. The Orange County database was used for the proposed Project. The model calculates emissions of CO, SO₂, PM₁₀, and PM_{2.5} and the O₃ precursors VOC and NO_x. For this analysis, the results are expressed in pounds per day (lbs/day) and are compared with the SCAQMD mass daily thresholds described in Section 4.10.6 to determine impact significance.

^(*) The CalEEMod air model was beta tested and released for use just this year. In the May 2011 issue of "The Environmentor," a newsletter for the Association

of Environmental Professionals, San Diego Chapter, Joe O'Bannon writes about witnessing the beta testing of CalEEMod and states that he believes the new model will bring benefits, but will have the usual "startup bugs."

What are the startup bugs found to be associated with the use of CalEEMod and how will they impact the accuracy of its estimates with regard to the health and environmental impacts of the proposed Project? Given the known health risks of the criteria pollutants associated with the Project, the reliability, accuracy and functionality of the air modeling equipment must be established, especially because CalEEMod has many new applications, is new to its operators, and the full potential for problems is not yet known. The overall reliability of any model can only be known based on its usage in a real-world environment over a sufficient period of time. As an example, many of the functional problems with Microsoft's operating program, Vista, were discovered by the real-world users who purchased computers with the flawed program, not by the beta testers. No one got sick, became chronically ill or died because Vista didn't work the way it was supposed to. The sensitive receptors of the significant and unavoidable impacts cited in this DEIR might not be so fortunate if CalEEMod has undiscovered flaws.

The reliability of software models over time has been described in the "Laws of Software Evolution" that were formulated by Drs. Lehman and Belady (2). They refer to E-Types (embedded-types) software, which characterizes the majority of software in everyday use. The real world is constantly in flux and in order to remain relevant, E-Types systems must change as the world does. It has been cited by The Standish Group (3) that a full 83.8% of software projects surveyed fail to achieve their definition of success, which has been attributed to shifting user/developer requirements.

(2) http://blogs.msdn.com/b/karchworld_identity/archive/2011/04/01/lehman-s-laws-of-software-evolution-and-the-staged-model.aspx

(3) <http://www.projectsart.co.uk/docs/chaos-report.pdf>

On page 4.10-5 of Air Quality, it states the following:

Operational inputs to CalEEMod (*) include (1) the specific year for project operations, (2) vehicle trip generation rates, (3) fireplace types and quantities, (4) land use features that contribute to reductions in vehicle miles traveled (VMT), and (5) project criteria for energy use. Model default values for trip distances, fleet composition, and other factors may be adjusted for project-specific conditions. Output operational emissions data are separated into energy use, area sources, and mobile sources. The area sources are fireplaces, landscape maintenance equipment, consumer products, and architectural coatings used for routine maintenance. Consumer products (e.g., household cleaners, air fresheners, automotive products, and personal care products) emit VOCs. Mobile sources are the vehicles used by residents and by patrons, staff, and vendors for commercial businesses.

(*) Do the “operational inputs” to CalEEMod include season and time of day? Are weather and wind directions inputs? Ozone emissions are made much more rapidly in the hot months of the years and they are highest in the late afternoon and early evening. Are there worst-case scenario estimates available from the CalEEMod model?

In light of the above concerns about start-up bugs and the failure probability of software generally, how much confidence can be placed in the air modeling performed by CalEEMod? How was model beta-tested, for what length of time and how long has it been in use since? Has it been used for other development projects of this size and scope where residences, commercial space and a variety of villages will exist in the midst of an operating oil field and perhaps above abandoned wells, piping and oil sumps?

Thank you in advance for your responses to my concerns about the reliability of air modeling with regard to the health risks associated with this Project and my questions about the methodology.

Yours truly,



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